THE CULTIVATOR.

NEW "TO IMPROVE THE SOIL AND THE MIND." SERIES.

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THE CULTIVATOR

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THE FARMER'S MUSEUM,

(*Each no. containing* 16 *pages,*)

Is made up of selections from this paper, and published monthly at 50 cents a year—Fourteen copies for $5,00—Thirty copies for $10.

THE CULTIVATOR.

MONTHLY NOTICES.

COMMUNICATIONS have been received since our last, from J. J. T., J. Hitchcock, J., G. B. Smith, A. J. P., R. Chambers, D. J., Naturalist, S. W. Jewett, Jas. Bates, Nathan Howard, L. A. Morrell, J. Richardson, Rho., D. Y., James Hall, T. J. Lewis, S. Y., Alfred Kennedy, J. P. Norton, S. Walen.

Our thanks are due to T. H. WEBB & Co. booksellers, Boston, for a copy of the 6th edition of Judge Buel's "Farmer's Companion." Though this work has reached its 6th edition, it is not so generally known as it ought to be. It would be a valuable addition to all our School District Libraries.——To ALEX. WALSH, Esq. Lansingburgh, for the "New Sporting Almanac for 1844," a beautifully illustrated English annual.——To COLLINS, BROTHER & Co., booksellers, New-York, for Dymond's "Principles of Morality," abridged for the use of schools, by Caroline M. Kirkland.——To A. G. CARLL, Esq., Cor. Sec. Queens Co. Ag. Soc. for the Transactions of that Society for 1843.——To P. L. SIMMONDS, London, for his Colonial Magazine, No. 5. Nos. 1 and 2 were previously received.

☞ Mr. KENNEDY'S and Mr. JEWETT'S papers came too late for this month.

A. J. P.—"Yes," we shall be glad to receive the promised paper.

A. M. W.—Small bills of the Alabama banks are received in payment for subscriptions to our paper.

F. H., Gorham.—Your letter has been forwarded to the gentleman interested, in Illinois.

E. S. Jr.—The kind of Subsoil Plow you inquire for, can be obtained of Pruyn, Wilson & Vosburgh, in this city, and we presume also at the Seed and Implement store at Rochester. Price, $10 to $15.

R. A. B.—For Dorking Fowls, address H. T. CHAPMAN, New-York, who will have them for sale in the autumn. He could probably furnish the other articles wanted. We believe his price is $5, for a cock and two or three hens.

"A SUBSCRIBER."—We gave in our May number, p. 179, all the information we possess in relation to the machine for ditching, mentioned in Mr. Ellsworth's Report.

☞ A gentleman recently called at the Cultivator office and paid for the paper for one year, directing it to be sent to "*Julius A. Carpenter*, Kane co. Ill." We cannot send it till we know the *post-office* to which it should be sent. Will the person who paid the money, furnish it?

AMERICAN HOTEL.—It will be seen by an advertisement in this paper, that Mr. BEMENT, of the Three Hills Farm, has taken this well known house, and resumed the business from which he retired several years since, when he removed to his farm. "The American" has been thoroughly refitted and newly furnished from top to bottom, and we venture to say that those who visit it, will find no reason to complain of mine host or his appliances.

SAMPLES OF WOOL.—We are indebted to Maj. SANFORD, of Orwell, Vermont, for samples of wool from his flock of Merinoes—a notice of which, together with a portrait of one of his bucks, will appear in our next. We should be glad to receive samples from the fleeces of Col. RANDALL of Cortland, and Maj. REYBOLD of Delaware, notices of both of which will be found in another part of this paper.

POUDRETTE.—We have been requested to call attention to the advertisement of Mr. Dey, in this paper. Those who wish to secure a supply of this article, can now have an opportunity of obtaining it on advantageous terms.

VETERINARY.—REUBEN CHAMBERS, Bethania, Pa., recommends the Thompsonian medicines for the diseases of animals. Those disposed to try them, can obtain them of any Botanic physician. We are not disposed to entertain a discussion as to the comparative merits of the "life-destroying lancet," and the "glorious system" of Dr. Thompson.

THE WHEAT CROP, in this and the adjoining counties, has been very seriously affected by the fly, described in another part of this paper. In this, and Schenectady county, very many fields are entirely destroyed, and we learn that this is the case in some parts of Vermont.—*In Western New-York*, the crop is said to be far better than for many years past, equal in yield per acre, to the great yield of 1833.

CROPS IN OHIO.—By a gentleman from Muskingum county, O., we learn that much of the wheat on the rich and bottom lands, has not filled well. The straw was very heavy, but the prevalence of wet weather after it came into head, caused much of it to fall down. There is also considerable rust, so that on the description of land mentioned, the crop will be altogether a light one. The *hill land* wheat is generally good, and it is thought there will be as much (or more) produced in the State

this year, as there was last year. There was considerably more ground sown than for the last year's crop. The prospect is fair for heavy crops of corn and oats.

THE CROPS IN QUEENS COUNTY, L. I.—Extract of a letter from S. YOUNGS, Esq., dated Oyster Bay, July 15. —"Last week we finished gathering our hay and winter grain, and sincerely may we return thanks for the most favorable and propitious weather not only while harvesting, but for the whole season, having had frequent showers and warm weather, which is essentially requisite to our sandy soil, and the "Common Parent" is now truly teeming with the most luxuriant and abundant summer crops we were ever blessed with. Corn, oats, potatoes, &c., never looked better. Hay was not as abundant as in previous years; the drouth last season having killed all the young clover, which made it requisite last spring with many farmers to plow their new mowing grounds and plant corn on them. The fly made bad ravages with our wheat, all was injured, and many farmers have not more than half a crop. We are making preparations for our County Agricultural Fair, which will be held in October."

THE HAY CROP.—In most of the New-England States the crop of hay will be less than usual. From Maine, we learn that the crop, though fair, will not be so good as that of last year. In this State, so far as we have heard, it is good.

"THE ECONOMY OF FARMING, from the German of Prof. Burger, with copious notes from other German writers, by E. GOODRICH SMITH."—We are glad to hear that this work, which we noticed on its first appearance, in our last vol. p. 140, is well received abroad, orders for 200 copies of it, having been received from England. It contains a vast amount of the practical details of German agriculture, which have not before appeared in an English dress, and should be in the possession of every reflecting farmer. Price, 50 cents.

PROLIFIC SHEEP.—Mr. E. Chesebro of Guilderland, informs us that he has *ten ewes*, a cross of the South Down, which have reared this season *twenty-one lambs*—all good ones—from the same ten ewes, he last year reared fifteen lambs.

SHELTER FOR SHEEP.—Mr. Shanklin, of Tennessee, wishes to know the method of making shelter for sheep. As far south as Tennessee, almost any shelter that will turn rain, will answer. Where the climate is more rigorous, rnd protection from cold is requisite, better shelter must be made. Some crotched sticks placed in the earth with poles or rails laid over and covered with straw so as to shed rain, will do for a year or two pretty well. A dry spot should be chosen for erecting such sheds, and they should be barricaded against the wind on the most exposed sides. *Framed sheds*, with or without hay-lofts over them, may be made by any carpenter. Under these, the feeding racks or boxes may be arranged to suit the convenience of the farmer or shepherd.

HORN-PITHS.—The value of horn-piths for manure is spoken of in a late report of the N. Y. Farmers' Club, published in the N. Y. Farmer and Mechanic. The piths were put in trenches a foot deep, and the vegetation on these trenches was most extraordinary, and the manure "is believed capable of enduring twenty years." There is no doubt that these piths are a powerful manure, and yet there are probably tons of them wasted in this neighborhood every year. We saw a large pile of them the other day lying on the side of a hill, near one of our principal streets, which had been thrown there merely to get them out of the way; and if they were not manuring the ground, they were certainly manuring the *air* to a considerable extent. Around some of the slaughter-houses, also, there is an immense quantity of manure lying waste, or sweetening the water of our springs and water-courses. What is the use to talk of importing *guano*, or buying *poudrette*, when the means of obtaining abundance of the best of manure are accessible at home?

NEST EGGS.—Mr. N. Howard, Stephentown, N. Y., informs us that he prepares nest eggs in the following manner:—"Take walnut, or some heavy wood, turn in a common lathe, eggs in proper shape, as large as a turkey's egg; whitewash them, and when dry, they are fit for use. They are durable, and the lime quality is agreeable to the hens. Mine lay to such nest eggs, as well as to those of their own laying."

BARBOUR CO. (ALA.) AG. SOCIETY.—This efficient Society seems to be going forward with their work in the right spirit. At a recent meeting, resolutions were adopted, on motion of Col. ALEX. MCDONALD, recommending a more efficient action on the part of their State Agricultural Society, and also recommending the organization of Farmer's Clubs.

GOOD WHEAT.—The Delaware Journal states that F. Leonard, Esq. harvested this season, from three acres of marsh ground near Wilmington, 120 bushels wheat, weighing 62 lbs. to the bushel.—Mr. H. Capron states in the American Farmer that he has raised on a field of 20 acres, an average of 43 bushels per acre, of the Mediterranean wheat. He thinks this demonstates pretty clearly the success of improving the worn out fields of Maryland. *So think we.*

CLOVER SOD.—Mr. Helem Sutton answers several inquiries in relation to the crops and soil of Seneca county in this State, through the medium of the New-York Farmer and Mechanic. He says, "it is considered by farmers who make money by the business, that a clover sod is best for all spring crops, and rather best for summer fallow, and safest for enriching a farm."

CHARCOAL.—In reference to the effect of charcoal, Mr. S. says, "my farm was in the earliest settlement of this country, owned by a man who burned charcoal, and I find on those old beds always large wheat and bright straw, even if the rest of the field is poor, rusted and shrunk; and in fact all kinds of grain on these coal beds are good."

"KEEP IT BEFORE THE PEOPLE"—That the outrages perpetrated on PROPERTY IN THE SHAPE OF TREES, are at last arousing legislative and judicial vengeance. The robberies practiced openly upon gardens and orchards and door-yards have long and keenly annoyed those who devote care and labor to the cultivation of fine fruits and the embellishment of their homesteads. This species of pilfering, so common with children, exerts a pernicious influence on the minds of the young and the old; for those who plunder their neighbors this way while young, are commonly more or less tainted with thievish propensities in maturer life. "Train up a child in the way it should go, and when it is old it will not depart from it." Mark, then, the influence of example—of good or evil example—upon the minds of youth:—"We do not know," says the N. Y. Express, "when we have been more pleased with a judicial decision than that which we find recorded in one of our late London files. A boy, fifteen years of age, was convicted, and heavily punished for breaking a bough from one of the trees in a public garden. The sitting magistrate, in passing sentence on the offender, took occasion to use the following strong and sensible language: "that although the damage in this particular instance was small, yet the practice of breaking trees occasioned great damage, and the inhabitants of the different squares were put annually to great expense, in consequence of these depredations. *Persons had no more right to take a branch from one of these trees, than they had to go into one of the houses and steal a piece of plate.*"—We hope this will be 'recorded for a precedent,' in every court in this country."

PRESERVING BUTTER.—Mr. G. Fox of Hartford, Conn., in a letter to Mr. Ellsworth, published in his last report, says—"There are many things required to insure good butter. The butter itself must be well made; that is, worked enough, and not too much, and salted with rock salt. This being well done, and the buttermilk all expelled, the butter may be packed in good white oak, well seasoned casks, well filled. In cool climates larger casks can be used. In hot climates it is best to have small casks—say from twenty-five to thirty pounds; so that too much need not be exposed while using. Then put these small casks into a hogshead, and fill up the same with strong pickle that will bear an egg, and the butter may be shipped to the West Indies or Europe, and kept perfectly sweet. I have never found saltpetre or su

gar of any benefit. Butter of my packing has opened as good in the West Indies as it was in Connecticut. I will remark, that to keep butter in ice-houses, when it remains frozen, will answer, if the butter is to be continued in the same temperature; but if it is exposed to warm weather after being taken from the ice-house, it will not keep as long as if it had not been exposed to so cold a temperature."

DETECTION OF ACIDS IN SOILS.—Dr. C. T. Jackson says in the New-England Farmer that "the petals of the spider-wort, or *Tradescantia Virginica*, a common and bright blue flower, seen in many grain fields and gardens, will furnish, on being bruised and squeezed in a linen cloth, a rich blue juice, which has the property of turning *red by acids* and *green by alkalies*. The pulp, after being pressed, may be treated with a little alcohol, and will yield still more coloring matter.

GOOD COW.—Wm. Bellows, of Walpole, N. H., writes to the Mass. Plowman, that N. Giles, Esq. has a cow, "probably half Devonshire and half native," from whose milk there was made "from June 17th to 24th (fourteen milkings,) sixteen pounds and ten ounces of butter, which will keep till next spring." In skimming the milk, it is only necessary to cut round the edges of the pan, and the cream may be all lifted in an entire sheet. The cow, it is stated, has had nothing but pasture feed in summer, and "nothing but hay in winter, and this with roots and pumpkins while they last, is high feed enough."

APPLE-TREE BORER.—A writer in the Mass. Plowman, from whose initials (T. W. H.) we take to be Dr. Harris of Cambridge, says—"The apple-tree borer seems to have fled from this place. Neither beetle nor worm can I find among my own trees or those of my neighbors. Wishing to get a dozen or more of the *borer-beetles* to send to some friends abroad, I have been looking for them, in their season, during two years, without success." A copy of Harris' Treatise on Insects is offered to any person who will forward a dozen of the beetle of the apple-tree borer. It is directed that they be taken without rubbing, and thrown into scalding hot water, which will kill them in one minute.

POTASH WATER FOR TREES.—The Boston Cultivator says a pound of potash to a gallon of water makes too strong a wash for apple-trees—he has known trees so much injured by it that the bark had to be scraped off that it might not bind the tree. A pound of potash to a common pailful of water, he thinks sufficiently strong.

BEES.—D. Wakeman gives in the Cleveland Herald, his mode of catching the bee-miller or moth. He says: "I took two white dishes (I think white attracts their attention in the night,) or deep plates, and placed them on the top of the hives and filled them about half full of sweetened vinegar. The next morning I had about fifty millers caught; the second night I caught fifty more; the third night being cold, I did not get any; the fourth night being very warm I caught about four hundred; the fifth night I got two hundred." Were all these *bee-moths? (Galleria cereana.)* We should like to know.

CATTLE SHOW AND FAIR
OF THE
NEW-YORK STATE AGRICULTURAL SOCIETY,
At Poughkeepsie, Sept. 17, 18 *and* 19.

The trial of Plows will take place on Tuesday the 17th —General Exhibition, on Wednesday and Thursday, the 18th and 19th.

All persons who intend to compete for the Society's Premiums, must become members, which they can do by the payment of $1 at the time of entering their articles for exhibition.

All members of the Society will be furnished with a Member's Badge which will admit them and their families to the Show Yards. Tickets for admission, to those who are not members, 12½ cents.

The List of Premiums to be awarded at this Fair, was published in our Feb. number, p. 55. Since then, the following alterations and additions have been made:

Cattle—Best Ayrshire Bull, 3 years old, $15.—Second best, $10.

Jacks—Best, $15—2d best, $10.

Mules—Best pair, $15—2d best, $10.

Sheep—In the Classes for Sheep, the prizes are for the best *three* Ewes, instead of the "best Ewe," as heretofore published.

The following is a list of the Judges appointed to award the several Premiums:

On Farms—J. P. Beekman, Kinderhook; J. S. Wadsworth, Geneseo; Thomas Hillhouse, Albany.

On Trial of Plows—Caleb N. Bement, Albany; John Wilkinson, Union Vale; L. B. Langworthy, Rochester.

On Farm Implements—T. V. W. Anthony, Fishkill; Geo. W. Patterson, Westfield; Alvan Bradley, Whitesboro.

On Cattle, Class I—Alexander Grant, Dover; Anthony Van Bergen, Coxsackie; G. V. Sacket, Seneca Falls.

On Cattle, Classes II and III—Henry Whitney, New-Haven, Ct.; Dr. J. A. Poole, New Brunswick, N. J.; Thomas Hollis, Butternuts.

On Cattle, Classes IV, V, VI, VII, VIII—Adam Ferguson, Watertown, Canada West; George Randall, New Bedford, Mass.; Elnathan Haxtun, Beekman.

On Oxen and Fat Cattle—L. C. Ball, Hoosick; John T. Norton, Farmington, Conn.; Henry A. Mesier, Fishkill.

On Stallions—Lewis F. Allen, Buffalo; Theodore S. Faxon, Utica; John A. King, Jamaica.

On Breeding Mares—John C. Stevens, New-York; George Fordon, Geneva; Gen. A. T. Dunham, Watervliet

On Matched Horses—John M. Sherwood, Auburn; Wm. T. Porter, New-York; Duncan Robinson, Fishkill.

On Jacks and Mules—Jeremiah Johnson, Brooklyn; Noah Gridley, Amenia; Dr. Samuel McClellan, Nassau.

On Sheep, Class I—Henry Rhodes, Trenton; Wm. A. McCulloch, Greenbush; Elias L. Barton, La Grange.

On Sheep, Class II—Sanford Howard, Albany; Edward T. Hallock, Milton; William Fuller, Skaneateles.

On Sheep, Class III—Edmund Kirby, Brownville; Henry K. Morrell, Caroline Center; Hugh T. Brooks, Wyoming.

On Swine—H. S. Randall, Cortlandville; Samuel Youngs, Oyster Bay; Samuel Wait, Montgomery.

On Butter—Alexander Walsh, Lansingburgh; Z. Barton Stout, Richmond; R. L. Pell, Pelham.

On Cheese—Hon. Elijah Rhoades, Syracuse; W. A. S. North, Duanesburgh; Tobias L. Hogeboom, Ghent.

On Maple and Corn-Stalk Sugar—F. J. Betts, Newburgh; Myron Adams, East Bloomfield; Morgan Carpenter, Stamford.

On Silk—O. Hungerford, Watertown; J. R. Barbour, Oxford, Mass.; Daniel Stebbins, Northampton, Mass.

On Domestic Manufactures—Hon. Samuel Works, Lockport; Ransom Cook, Saratoga Springs; Joseph Arnold, Kingston.

On Vegetables—Wm. Wilson, Albany; T. Bridgman, New-York; D. B. Futler, Hyde Park.

On Fruits—J. J. Thomas, Macedon: J. F. Sheaf, Poughkeepsie; Albert Heartt, Troy.

On Flowers—James Lennox, New-York; A. J. Downing, Newburgh; M. B. Bateham, Rochester.

On Plowing—Joel B. Nott, Guilderland; Elon Comstock, Rome; Martin Springer, Brunswick; Henry Staats, Red Hook; Warner Abbot, Otisco.

On Discretionary Premiums—Hon. Robert Denniston, Salisbury Mills; Hon. Abram Bockee, Federal Store; Samuel Ackerly, M. D., Richmond, L. I.; J. J. Viele, Lansingburgh; J. B. Duane, Duanesburgh.

On Cattle, &c. from other States—Hon. Levi Lincoln, Worcester; James Tallmadge, New-York; James Gowan, Philadelphia; H. L. Ellsworth, Washington; J. W Thompson, Wilmington.

FEASTING.—George Egerton, eldest son of Lord Francis Egerton, M. P. for South Lancashire, lately attained his majority, on which occasion he gave a public dinner, at which several thousand persons were present; 4,000 lbs. of meat were cooked, and 17 cwt. of plum pudding. There were 1,500 gallons of ale, 54 gallons ginger beer, 36 gallons lemonade, &c.

A DAY IN THE COUNTRY.

VISIT TO LINDENWALD.

We lately passed a beautiful summer's day in the vicinity of Kinderhook. Among other places of interest, we visited *Lindenwald*, the seat of ex-president VAN BUREN. Lindenwald, formerly the residence of Judge Van Ness, is pleasantly retired, and commands a very agreeable landscape view, the most prominent features of which are the Catskill mountains, whose elevated summits are often veiled by the shadowy cloud.

We found Mr. Van Buren at home, and accompanied him in a walk over the farm. When he entered on the occupancy of this place on his retirement from the Presidency, three years since, it was much out of order: the land, having been rented for 20 years, and been under cultivation for the period of 160 years. Several of the buildings had become poor, the fences were old and were rotting down, and bushes and grass of wild growth had taken possession of much of the farm. During the short time it has been under Mr. Van Buren's management, the place has been greatly improved, and a course is now fairly begun by which a handsome income may be derived from it. The garden and pleasure-grounds have been enlarged and newly laid out—hot-houses have been erected—and a large number of fruit and ornamental trees, shrubbery, &c. have been planted. The greenhouse contains a collection of exotic fruits and plants, among which were some fine grapes just ripening. In the garden we noticed fine samples of all the fruits of the season, and some of the finest melons we have ever seen, (so early in the year,) in this latitude.

Among the objects which give beauty and interest to the grounds, are two artificial ponds in the garden. They were easily made by constructing dams across a little brook originating from springs on the premises. Soon after they were made, (three years ago,) some fish were put into them, and they are now so well stocked, with trout, pickerel and perch, that Mr. Van Buren assures us they will afford an abundant supply for his table. This is a matter well worthy of consideration. There are many situations where such ponds may be made, and, with a trifling expense, the luxury of *catching* and *eating* a fine trout or pickerel may be had at any time.

Several of the fields have been enclosed with new fence, and several buildings erected; among which are a very tasty farm-house, and a barn calculated for storing 150 tons of hay after being pressed.

But perhaps the most important improvements which have taken place on the farm, have been made on a tract of *bog land*, thirteen acres of which have been thoroughly reclaimed, and are covered with luxurian crops of grass or oats. Three years ago, this land was almost worthless. It was first drained by ditches. The stumps, bushes, &c. were then cut out and burned, and the ashes spread on the land. It was afterwards sown to grass—using a mixture of timothy and red-top seed—three pecks to the acre. The whole cost of reclaiming was thirty-eight dollars per acre, and the land will now pay the interest of a hundred to a hundred and fifty dollars per acre. In this Mr. Van Buren has set a good example, which we hope will be followed by other farmers in the neighborhood who have lands similarly situate.

The *potatoe crop* is one of considerable consequence on this farm, as well as on others in the vicinity. Mr. Van Buren raises the variety called *Carters*, produced from the *ball* a few years ago by the Shakers. He considers these far the most profitable kind known. They yield well, and their quality is thought equal to any. Mr. Van Buren assured us that all which could be raised would readily command fifty cents per bushel, by the quantity, in New-York. All the crops appear to be well managed, and are promising. Leached ashes were tried here last season with excellent success. Great benefit has also been found from plowing in clover.

Mr. Van Buren keeps but little stock, a considerable object being the sale of hay, which a large portion of the farm is well calculated to produce—the horses for carriages and farm-work, with a yoke of oxen, and a sufficient number of cows to afford milk and butter for the family, comprising about all. We did not see the cows, but were informed that they were grade Durhams, and were excellent for the dairy. We were shown a good three years old Durham bull, whose head and limbs denote good blood, and whose mellow skin indicates that he is a thrifty animal.

All the improvements of which we have spoken, have been planned and executed under the immediate supervision of Mr. Van Buren, who finds in these useful enterprises a salutary exercise for the faculties of the mind and body, which seems to be highly enjoyed. In this pleasant retreat, removed from the cares of state, and the turmoil of political wars, he,

——"With a choice few retired,
Drinks the pure pleasures of a rural life"

VISIT TO THE PRESIDENT OF THE N Y. S. AGRICULTURAL SOCIETY.

In the village of Kinderhook, is the residence of Dr. J. P. BEEKMAN, President of the New York State Agricultural Society. Dr. Beekman's *home place* is not large, (embracing only about 100 acres,) his principal farming operations being carried on at three other farms, situated from two to three miles distant. His primary objects are wool and grain. He has about one thousand sheep, mostly of Saxony blood. Their wool is very fine, and Dr. B. expects to realize sixty cents per pound for the clip of this year. We were shown the fleeces, which averaged two pounds ten ounces each, were very clean, and put up in good order. We saw none of the sheep, excepting a few bucks, and those we had not an opportunity of closely examining, but from their appearance, should think some of them were excellent animals.

Dr. Beekman gives his sheep generally no grain or roots—feeding in winter principally on hay, which he is careful to have cut at the proper time and well cured. To some of the feeble sheep, he sometimes gives a few oats. He finds his mode of sheep husbandry attended with very good profits. He sells no hay—finding that he can, in the average of seasons, turn it to better advantage by feeding sheep, besides the great benefit the sheep are to the land. The return for his hay is usually ten dollars per ton. Every farmer can see that this is profitable farming, because hay at ten dollars a ton, *on the farm*, is a profitable article.

Dr. B.'s course of farming, on his sheep farm is very simple—the routine being merely grain, hay, and pasturage—the latter affording the best possible preparation for wheat—and the fertility of the farm has been constantly increasing under this management.

Plaster has been extensively used for many years, particularly on clover amd Indian corn, with the best effects; but its effects are not now as visible as formerly; and *leached ashes* have taken its place in a good degree, the latter being now found most useful.

ERADICATION OF COUCH GRASS, (*Triticum repens.*) Many of the farms about Kinderhook are overrun by this pest. Dr. Beekman has hit on a good plan to eradicate it. He has found that if he can keep the ground thickly covered for a year, with some other crop, the couch-grass dies—it is *smothered* out. The plan is this: if there is a piece of ground on which this grass has become troublesome, it is pastured with sheep till July—then evenly turned over with a plow, and sown immediately to buck-wheat. The crop starts quickly, gets the lead of the couch-grass, and soon covers the ground. The next spring, the ground is planted to potatoes—they, also, thickly shade the ground, and continue to do so for nearly the whole season, which pretty effectually does the work for the couch-grass.

LIME ON SORREL.—To ascertain, if possible, whether lime will kill sorrel, Dr. Beekman had several loads of good lime spread on some land which was much infested with this plant. It was spread in the central part of a field thick, that the effect, if any was produced, might be seen. After a lapse of two years, *no* effect whatever has been discoverable, either for or against the sorrel, or any other plant. The soil is rather light, inclining to gravel. On some other descriptions of soil, the lime would probably have produced beneficial effects as a manure.

Dr. B. keeps very particular accounts of his farming operations, and is able to calculate accurately the "loss

and gain." He has sometimes rented his lands, reserving the right to direct as to their management—giving to the tenant, as the custom is, one third of the crops—the tenant performing all the hand-labor, and the landlord furnishing the necessary implements, teams, seed, &c. and paying the taxes. At other times he has managed his farms himself, hiring all the labor. On comparing profits, he found he made from $150 to $200 a year more, under his own management, than when the land was rented. We have no doubt that similar results would generally follow, under *good* management, and we would recommend the example to some farmers within our knowledge, who under the idea that they cannot make their lands profitable in their own hands, or with a view to "save trouble," resort to a system of renting, by which, in a few years, their farms correspond to Solomon's description of the garden of the slothful.

There is considerable Indian corn raised in the vicinity of Kinderhook, and in general the present crop looks well. We noticed some farmers practice very thick planting. In some fields the rows were only three feet apart, the hills eighteen inches apart in the rows, and four stalks to the hill. We do not hesitate to say this is too thick. Dr. Beekman's crop was planted at wider distances in the row, (by six or eight inches,) with not more than three stalks to the hill. The prospect is fair for a good yield—in fact he generally gets from fifty to seventy bushels to the acre.

The wheat crop in this neighborhood is generally very poor. It was much winter-killed, and has suffered some from rust, and much from the worm, or maggot in the head, and some from the Hessian-fly. Rye is good.

The farmers of Kinderhook are generally forehanded, and some of them evince as good management as is to be met with anywhere. Money is *made* here by farming—many instances were mentioned to us where men who had begun the world by "hiring out by the day," had, in the course of twenty or twenty-five years, accumulated property to the amount of forty to sixty thousand dollars, wholly by farming.

RELATIVE PROFITS OF FREE AND SLAVE LABOR.—Dr. Beekman related the following history in illustration of this point. During the period in which slavery was tolerated in this state, a gentleman owned a farm at Kinderhook consisting of 750 acres, in the cultivation of which he employed ten slaves. The products of the farm were always insufficient to support the family and carry on the farm, and had it not been for the business of blacksmithing, which was carried on by the owner of the farm, (but with a set of hands kept expressly for the purpose,) he could not have made a living. When the gentleman died, the farm was divided into three parts, among the heirs. In the mean time slavery, in this state, was abolished. The farms were carried on by *hired* labor; the owners raised larger families than their father did—educated them better—lived better—and each, from one third of the original farm, accumulated a handsome fortune.

APPLICATION OF MANURES.

The value and necessity of manures to successful farming, is now generally admitted, but there is still much that is faulty in the modes of applying them: and while it is acknowledged that there is still much to learn respecting their operation, there are a few principles that experience teaches are worthy of more notice than has yet been given them.

One of these is that in the same soil, some varieties of the cultivated plants require more manure for their growth and perfection than others. Every farmer is aware of this; he knows that corn requires more manure than peas or beans; and that some of the tap-rooted quick growing plants, will, with a small allowance of manure at the outset, give good crops on soils where the grasses, or wheat and barley, would be a failure. Few, however, have inquired into the reason of these facts, or allowed them to have their proper influence in the application of their manures. The causes of this difference in the requiring of manure, are several; one of them is their adaptation to drawing nourishment from the air, instead of depending solely on the soil for it. Quick growing plants with broad leaves, and few roots, or those single and deep penetrating, possess this power in a remarkable degree. Only examine the root of the common pea for instance, and compare it with that of corn or wheat, and this difference will be manifest at once. The root of corn spreads in every direction; it clearly requires a large and rich pasture; its double sets of roots seem provided at once for support and nourishment, and it is remarkable that the last throwing forth of the roots, like those from the vines of some of the cucurbitæ, takes place precisely at the time when large supplies of nutriment are required for the formation of the fruit. The root of the pea on the contrary is very much smaller in proportion to the bulk of the plant; it does not spread like those of corn and wheat, but it penetrates to a considerable depth, and seems more adapted to provide the moisture than the nutriment of the plant.

Another cause why plants do not require equal supplies of manure, is to be found in the fact of their not all consuming the same time in arriving at perfection. As a general rule, it may be said that the longer a plant is in the soil before it matures its seeds, the more the soil is exhausted. Of this, winter wheat is a well known instance as compared with summer wheat; but perhaps a still better example is that to which allusion has already been made, that of corn and peas. The last requires not more than two-thirds the time of the former for maturity, and the exhaustion of the soil by it, cannot be compared with the former. Buckwheat too, is of remarkably rapid growth, and hence it has been selected as one of the best plants known for the process of green manuring. Used in this way, it evidently returns to the soil more than it takes from it, fertilizing, instead of impoverishing, and leaving a much larger supply of organic matter for the use of the future crop, than existed previously.

A cause not remotely allied to the one just considered, is found in the well known result, that where the seeds are to be matured on the soil, more manure is required, or in other words, the exhaustion of the soil is greater, than where such maturity, or the formation of seeds does not take place. Thus while a crop of turneps or beets exhausts the soil comparatively little, these same plants when transplanted for seed are of the most exhausting kind, as every grower of seeds knows; and the same may be said of most of those roots that do not mature their seeds the first year. Clover is also a well known example of this. If clover is cut before it is mature, the roots seem scarcely checked in their vigor, new shoots are rapidly thrown out, and the exhaustion which has taken place is evidently of the slightest kind. On the contrary if clover is allowed to mature its seed, the effect which the process has on the exhaustion of both the soil and the plant, is of the most striking kind; so great indeed that an attempt at two crops of seed from the same plant is rarely if ever known, and a course of other crops and reseeding usually follows, where clover seed is grown.

From these considerations, which we are not able at this time to pursue farther, it would seem that the application of equal quantities of manure to all crops is a useless expenditure. That we should ascertain those upon which manure produces the best effect when applied, and not let the mere convenience of the application, determine its use. It is true there are few cultivated soils on which manure is not advantageous, but there are some crops to which large applications of strong or unfermented manures would be fatal. Thus corn will be the better for a quantity that would destroy wheat; and the pea requires less than the potatoe, as a direct application. There are some plants that require the stimulating or forcing, that characterizes the action of fresh manures; while that action to others, would be an injury instead of a benefit. Of this, the vigorous and productive corn grown in or around old yards, or deposits of manure, and the lodged, rusted, shrunken wheat of similar places, is a conclusive and instructive example. We are convinced that the best application of manures is a subject which has received too little attention from our farmers; and while he is to be commended who applies all the manure within his reach, more profitable results would be realized by many, were they to be applied more in consonance with the laws which govern the growth and nutrition of the several plants cultivated.

CUTTING BUSHES AND THISTLES.

From a time the memory of man goeth not beyond, our forefathers have recommended the "old of the moon in August" as the best time to kill bushes by cutting them. The time recommended may be a good one for this latitude, though we are not *lunatics* enough to believe that *lunar* influence has much to do with the effect of that operation. All may have noticed that there is a time in the summer when the growth of shrubs and trees stop, the wood hardens, and the buds of the next year form. According to our experience, it is at this particular juncture, when the sap undergoes a change, "turns," as the phrase is, that bushes are most likely to be killed by being cut. This change may take place earlier or later in different latitudes, or in different seasons, and hence we think it cannot depend on the position or phases of the moon.

The best mode of exterminating briars, that we have ever known, is to mow them close to the ground with a stout scythe, soon after the growth for the season has stopped, and afterwards pasture the ground with sheep. The sheep is very fond of the briar when it first starts from the ground, and if a sufficient number are turned on to eat the briars as fast as they appear, two seasons will generally exterminate them. They will not generally start much the same season they are cut, but it is important they should be fed down.

Plowing briars, we have found rather to encourage their spread. Many of the roots run below the reach of the plow, and every piece of a root will send up a new shoot, so that the more they are cut, the more they grow, unless the roots are brought to the surface and carried off or dried and burnt.

Bruising bushes has sometimes a better effect in killing them, than cutting, and for this purpose a tool called a "bush-whacker" is used. In killing whortle (or "huckle") berry bushes, sometimes troublesome in the rocky pastures of New England, this tool may be preferable to the scythe.

We have had the best success in killing Canada thistles by mowing them when they were just past full bloom. The root will then die down to a great depth, and if the land is in grass, the sward will often spread over the thistle-patch and give the next year a crop of good clean hay. We have not seen the digging of thistles (that is the Canada thistles) attended with much advantage. The roots run very deep—we have traced them three feet below the surface—and a very small piece only may throw up a new shoot. The other kinds of thistles, which are only annual, or at most biennial, are easily killed by cutting them off with a hoe, or a tool made for the purpose, just below the crown. This should be done as soon as they can be readily seen, for they often occupy the ground to the exclusion of the grass, and besides, where they are large, the grass which grows near them, cannot be eaten by stock, on account of the annoyance occasioned by their prickly branches and leaves. We have sometimes seen cattle forced to leave the best part of the pasture by these pests.

DISEASE IN COWS.

Mr. JOHN RICHARDSON of Connecticut, inquires the name of, and remedy for a disease which has lately broken out among milch cows, which is described as follows: "The first symptom is a stiffness in the limbs, which increases till the animal is hardly able to walk. The feet appear feverish, the hoofs grow long or shrivel up, the animal appears week across the hips, rises with difficulty, is soon very poor and of little worth through the season. Some have died, but they generally recruit in the fall after becoming dry." From this description we cannot say what the disease is, and are therefore unable to prescribe a remedy.

The same writer inquires what are *warbles* in cattle. They are worms in the skin, produced from eggs deposited by a species of gad-fly (*Œstrus bovis.*) Every farmer has seen them. The cattle dread the fly, and may frequently be seen running to the woods or bushes to avoid its attacks. The worms seem to occasion the cattle but little inconvenience, excepting that when they are nearly full grown, and are exposed to cold storms, their backs sometimes become sore from water soaking into the holes which the worm makes for its egress in the skin.

GUANO.

We have received from Mr. E. B. Brown, a small specimen of Guano just imported into Connecticut from the bird islands of Africa, and we shall be glad to receive the larger quantity promised. It can be sent in a box or cask, via New-York. Mr. B. makes some inquiries in regard to the mode of using it. In England it has been used for nearly all crops. Its comparative value is variously estimated. Some reckon a bushel equal to a "cart-load" of stable-dung. From fifteen to thirty-five bushels are recommended per acre—or from two to four hundred pounds. It is usually sown on the surface, or not buried very deep. It is a very powerful manure, and grass and other crops are said to be sometimes "burnt," by applying too much. The London Gardeners' Chronicle gives the following directions for the application of this substance:

"1. It should never be applied in contact with seeds, as it kills them as soon as they begin to vegetate.

2. It should be mixed as equally as possible with about four times its bulk of finely pulverized earth, or peat-ashes, (coid.) If sand is used, about twice its bulk will be sufficient.

3. The quantity per acre may vary from two to four cwt., according to the nature and quality of the land. Recent experiments have shown that a quantity which proved highly beneficial in poor soil, became deleterious upon land previously rich.

4. The best time for applying it is shortly after vegetation has commenced, and immediately before rain, or during damp warm weather.

5. The best mode of application is, to divide the quantity per acre into two or three equal parts, and sow them broadcast at intervals of about ten days or a fortnight.

6. For small allotments it may be more convenient to use it in a liquid state—in which case, mix 4 lbs. guano with 12 gallons of water, and let it stand for 24 hours before being used. The same guano will do for mixing again with the same quantity of water, after the first is drawn off."

THE BEE MOTH.

Mr. THOMAS J. LEWIS makes the following objections to "Howell's Bee-protector," noticed in our June number. He says he invented the same plan several years ago, but was obliged to give it up as worthless. "1st. Suppose there are six or more bees on the vibrating board next the hive, so as to depress it and allow them to enter, the bee moth will then have the same facility for entering as the bees, and there is no knowing how long it may be before the bees, or perhaps the bee-moth, will allow the entrance to close again. 2d. Should there be seven or more bees loitering on the other end of the board, which will close the entrance, then those upon the inside of the hive would have to call a meeting and appoint a committee of eight or more to counteract their weight, to let themselves out. 3d. On account of the necessary delicacy of its structure, it would be very liable to get out of order and prevent its operating from moisture swelling the wood or rusting the pivots, and dirt would be apt to collect from the inside on the end next the hive, keeping it open all the time. 4th. The confinement to which the bees would be subjected by any such apparatus, or even a wire screen placed before the entrance at night, is very annoying to them, as has been proved by that gifted Apiarian, Mrs. Griffith of New-Jersey, the original inventor of the Charlieshope hive."

Mr. Lewis has considerably studied the habits of bees, and believes that he discovered several improvements for their management, which when perfected and proved, he intends to bring before the public.

☞ The 17th annual Fair of the American Institute will commence on the 6th October, at Niblo's Garden.

CLEAN CULTURE

It is a fact that ground which is kept from vegetation of any kind will not dry up so much as that on which a crop is grown. There are many who doubt this, but if they would make a proper examination, their doubts will be removed. Make an experiment—take a piece of ground in the garden, and hoe it over every day, or often enough to keep all kinds of vegetation from starting. Sow another piece adjoining, with grass, or some kind of grain. After a drouth of two or three weeks, examine both pieces by digging into them with a spade or shovel. The earth of the grass or grain plat, will be found dry like ashes, to the depth perhaps of a foot or more. The other plat will be dried in only two or three inches—below that it will be found quite moist. Examine the ground in an orchard in a dry time, and if it is not naturally a wet piece of ground, it will be found dry to a great depth. If there is a tree in your corn-field, see if the ground is not much dryer near it than on similar ground away from the reach of its roots. The fact is, the roots of vegetation bring up the moisture from a greater depth below the surface, than it could be done by simple evaporation. This may be known by noticing how much more moisture is required to support a crop of corn when the stalks are nearly full grown, than in its earliest stages.

Now, from all this we deduce an argument in favor of *clean culture*—that is, a culture which permits no useless vegetation to grow among cultivated crops; the advantage of which would be to give the crop the whole benefit of the moisture and other nutriment of the soil, instead of giving a portion to the worthless weeds.

In a dry time, we frequently hear farmers say—"it will not do to work my corn or potatoes, they need all the grass and weeds to keep the ground from drying up." Now, this, as we have shown, is all a mistake—the grass and weeds make the ground dry faster and deeper. But it is alledged that corn has been injured by plowing or working it when the weather was very dry. We admit that this effect may have followed under particular circumstances. That is to say, if corn gets too large before it is worked, injury may be done. The reason is, that the roots have become extended, and the plow cuts off so large a portion of them, that the remainder cannot supply the stalk, and it soon withers. This is the way the "*fired*" corn, sometimes spoken of at the south and west, is generally produced. But it is only when the roots of corn have become widely extended, and are torn and mutilated in the operation of working it, that any such consequence follows. If the crop is worked, as it ought to be while it is small, no fears of injury need be entertained.

GOOD SHEEP.

MERINOES.—We copy the annexed notice of the produce of a select flock of Merinoes, owned by one of the vice-Presidents of our State Ag. Society, from the Courtland County Whig. They must be good sheep surely to produce fleeces worth $2,40 each. Such sheep ought to be exhibited at our State Fair. Will Col. Randall please send us samples of the wool?

"PROFITABLE SHEEP.—Henry S. Randall, Esq. of Cortland, has a flock including lambs, of 60 full blooded merino sheep. Their fleeces this season averaged a trifle over 5 lbs. of thoroughly washed clean wool, entirely destitute of any gum excepting the dark crust on the extremities of a few of them, and this wool sold readily to Dickinson & Hibbard of that place, for 48 cts. per lb. cash. There were no wethers in the flock and there were but two bucks to swell the average.

"A smaller and exceedingly choice lot of yearlings and two year old ewes fleeces, averaged the extraordinary amount of 5 lbs. 10 oz. to the fleece. A two year old buck (from which more than half a pound had been taken in samples) sheared 9 lbs. 12 oz. We understand these sheep have been selected with much care from the best flocks in this state and New England, and are not probably surpassed or hardly equalled by any flock in the United States. Their winter keep (a question of some interest in connexion with such an enormous product of wool) we learn on inquiry to have been as follows:—60 sheep fed hay morning and night—at noon daily received three bundles of oats and barley until Christmas, after which they received four bundles of oats. They received no hay at noon throughout the winter. The grain was cut greenish, and was considerably shrunken. This, with a comfortable shed and plenty of pure water, constituted their entire keep. Mr. Randall reared 102 per cent of lambs! We wish more of our farmers possessed such sheep."

LEICESTER SHEEP.—The Delaware Republican gives the following account of the clip of the celebrated flock of Leicester or Bakewell sheep, owned by Major PHILIP REYBOLD, of that state. From all we have heard, we are led to believe that this flock of sheep is one of the the most valuable in the country. We should be glad to have from Major R. an account of their blood, and his mode of breeding and management. Will he not send a sample of his flock to our next fair at Poughkeepsie?

"Last week, we learn that Major Reybold, of this county, commenced shearing his large and valuable flock of Leicester sheep. On Friday he invited several of his agricultural friends to witness his operations, and partake of a "fatted lamb" of that famous breed. One hundred of the run of his flock were sheared under the inspection of Isaac Reeves, Capt. Maxwell, Dr. J. W. Thompson, and C. P. Holcomb, Esq., and averaged about 7¾ pounds per fleece; some weighing nearly 9 pounds; few under 6, and generally from 7 to 8 pounds; a most extraordinary yield. Major Reybold's home flock consists, we are told of about 600, and as many more divided among his different farms.—We are informed, that out of ten shearers, six were grown up sons of the Major, all married men except the youngest, who certainly deserves to be.—Our friend describes the scene as one of the most patriarchal and interesting he ever witnessed: and of Major Reybold's whole farm, dairy, and agricultural arrangements as in the highest good taste and prosperity. The fine mutton of Mr. R. has been long celebrated. His great clip of long wool, we should think, under the present tariff will bring him handsome prices, and be admirably calculated for the manufacture of mouselin de lains and combing puposes. Success to him, and the agricultural spirit pervading Delaware."

AGRICULTURAL PAPERS.

A "PLOW-BOY" has reached us from Cincinnatti. He is an ingenious and spirited little fellow, and makes his interesting visits monthly, at a charge of only *twenty-five cents* a year! The *funny* letters, made out of ox-yokes, spades, rakes, scythes, reaping-hooks, &c., are worth ten times the cost, for aiding and strengthening the organ of *genius* in *other* boys! Conducted by A. RANDALL.

The NEW-ENGLAND FARMER, Boston, has commenced its twenty-third volume. Next to the American Farmer, Baltimore, this is the oldest agricultural paper now in existence in this country, and is certainly one of the best. Edited and published (weekly) by JOSEPH BRECK, Esq.

The VALLEY FARMER, Winchester, Va., No. 1 of the first volume, has reached us. It is well printed, filled with useful matter, and deserves encouragement. One dollar a year in advance. J. B. BENTLEY, publisher.

THE NEW-YORK FARMER AND MECHANIC, is published semi-monthly at 208 Broadway, New-York, edited by S. FLEET. Terms $1 per year. It contains the report of the doings of the N. Y. Farmer's Club, which are highly interesting and useful, and is in all respects well conducted.

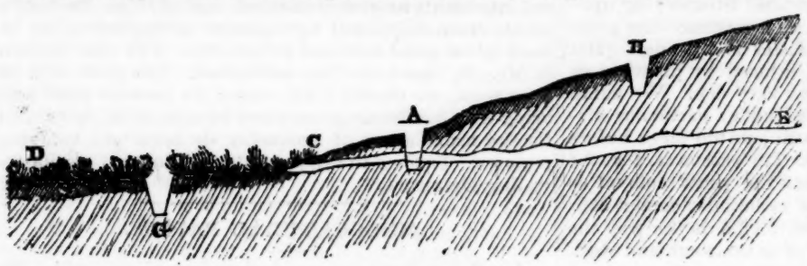
DISEASE IN POULTRY.—Turkies and dung-hill fowls which are kept closely confined, are often affected with a disease of the eyes and head, sometimes called "*sore head.*" It sometimes destroys the sight. Some suppose it to be contagious. We have known fowls to have it, which had their liberty in the day time, but roosted at night in a building or room fitted purposely for them. We observe that Mr. A. P. Cummings, at a late meeting of the Farmer's Club, New-York, gives it as his opinion that the ammonia of the dung injures their eyes. He removes the dung and scatters on the spot plaster of Paris freely.

THOROUGH DRAINING.

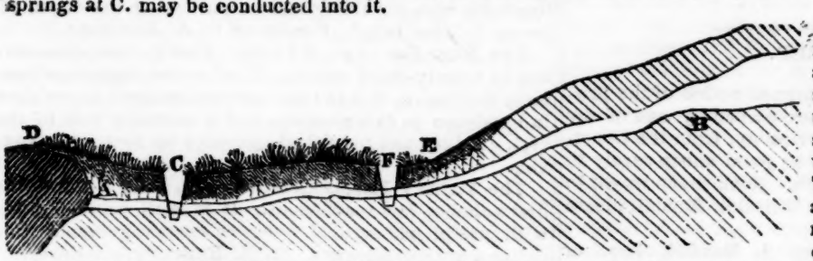
Draining land fully and completely, is one of the greatest improvements of modern agriculture, and few things better display the advantages of a combination of science with art, than a well conducted system of draining. The necessity of draining land, arises from several causes, all of which have more or less influence on the productiveness of the soil, or the value of the crop. Although moisture is absolutely necessary to the growth of plants, an excess of it is always injurious; and the extent of the injury is usually in proportion to the stagnancy of the water in which the roots are immersed. When soils are filled with water, air is excluded, and the consequent decomposition of animal and vegetable matter, so essential to the formation of the materials required for the growth and sustenance of plants, is almost entirely prevented. Soils also, containing an excess of moisture, are of necessity cold, and consequently unfit for many kinds of crops which would grow well were the requisite dryness and warmth given. The difference of temperature between a soil saturated with water, and the same when containing no more than is essential to the success of vegetation, varies from 6 to 8 degrees, according to the carefully conducted experiments of Dr. Madden and Prof. Johnston. When it is remembered that this difference in temperature would be decisive of the fate of some crops, Indian corn for instance, the importance of a proper drainage will be seen at once. A soil containing an excess of water, usually has a dense subsoil, a shallow soil to cultivate, and cannot easily be deepened, as drier soils can. They are therefore liable to pass from the extreme of too much moisture, to that of excessive drouth, and as the roots of plants are unable to penetrate the dense subsoil, wet lands, or those liable at times to have an excess of water, usually suffer much more from drouth than deeper, drier ones do. There are other reasons for draining land that will readily occur to the practical farmer, but these are sufficient to show the great utility and necessity of freeing all soils intended for cultivation of their surplus water.

An excess of water in a soil can usually be traced to one of two causes; that which rises from springs, in the soil itself, or that which falls upon it in rain or snow. Except in some peculiar districts of very level country, or where the natural drains for the surface water have been obstructed, it will be found that excess of water usually arises from springs; and so general is this cause, that there are very few farms in our country, in which there is not more or less land that would be benefitted by draining. The formation and direction of springs, is determined by the geological character of the country, the nature and dip of the strata, and their composition, whether of rock, clay, gravel, &c. Water from the surface, falls or percolates downwards, until it meets with some impervious strata, and along the surface of this it flows, until it reaches the outcrop of that strata, or sinks through creeks and fissures to some still lower strata or level. When the water reaches the outcrop of an impervious strata, springs are formed. If the quantity of water is considerable, it flows off in streams; if small, it only makes the ground wet and cold, frequently forming swamps, or otherwise rendering the soil unfit for cultivation.

Figures 65 and 66, from Low's Practical Agriculture, will show the nature of such strata, their action in forming springs, and the method of cutting them off by drains, better than a column of description.



In fig. 65, the strata below the line from D. to E. denotes an impermeable strata. The strata from C. to E. is the one containing the water, flowing out at C. The strata above is pervious and the water sinks through it into the one below. From D. to C. is seen the swamp made by water from the range of springs at C. H. is a drain cut so high as to produce no benefit, as it does not reach the water bearing strata. A. is a drain that cuts that strata, but will not effectually cut off all the water, as the distance from C. to A. is too great. Experience has proved that in all such cases of wetness caused by springs, the true course is to cut the drain "between the wet and the dry," or a little above, as at C. on the cut. The drain G. will carry off all surface water, and being in the lowest part of the ground, the drains that cut off the springs at C. may be conducted into it.



In fig. 66, is shown the manner in which several series of springs are formed on the same slope, or sometimes on the same level, and the necessity of cutting off each series by a separate drain, if we would effectually drain the soil. Thus it is easy to see that a drain at A. would be of little use, as not touching the source of the evil at all. Cutting off the springs at D. would have little effect, as those at C. and B. would continue the difficulty; and a drain at B. would only take off the water furnished by the upper water strata. The only thorough remedy is to cut as many drains as there are series of springs, to spread their water over the land.

Fig. 67 (see next page,) shows a front view of a sloping ground with a succession of wet or springy places on the surface, rendering it unfit for cultivation, and the manner in which the drains for conducting off the water and rendering the soil dry, were placed. The lower cut is a section of the same ground, exhibiting the impervious, and the water bearing strata, in succession, with the drains. In this instance, the water from the drains is conducted into a brook flowing at the foot of the sloping ground.

It not unfrequently happens that the land to be drained is level, and surrounded by hills or elevated grounds, from the base of which issue the springs that saturate and render useless the soil of the flat part. Most of the bog meadows, as such low lands are usually termed in this country, are made in this way; and experience shows that when drained and rendered fit for cultivation, they are the richest and most productive of our soils. This indeed could hardly fail of being the case, as they have from time immemorial been the depositories of the vegetable matter and wash of the adjacent lands. In some cases, these low lands have a natural outlet or drain; if not, the most favorable point for one must be selected, which, if possible, should be at the lowest part of the grounds, that all the drains necessary, may have a sufficient descent for the easy flow of the water. If this is not the case naturally, then the central or main drain must be made sufficiently deep at its outlet to permit the water to pass off without difficulty. The quantity of water to be carried off must determine whether the main drain is to be an open or covered one. If the quantity of water is large, an open drain is to be preferred; but if otherwise, it will be better that like the

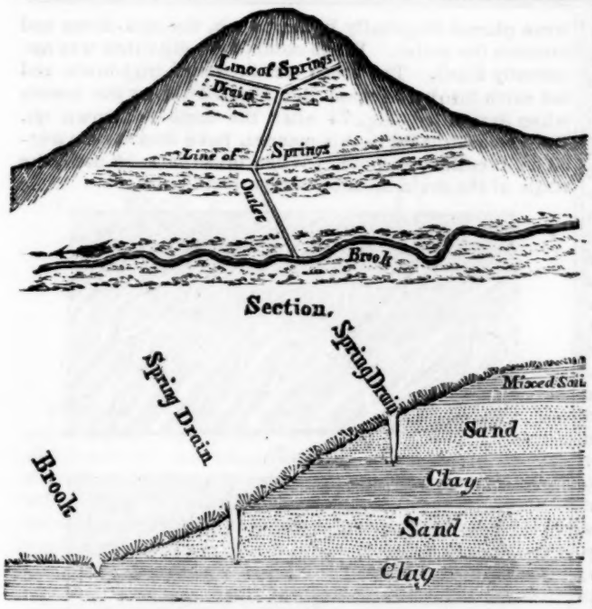


Fig. 67.

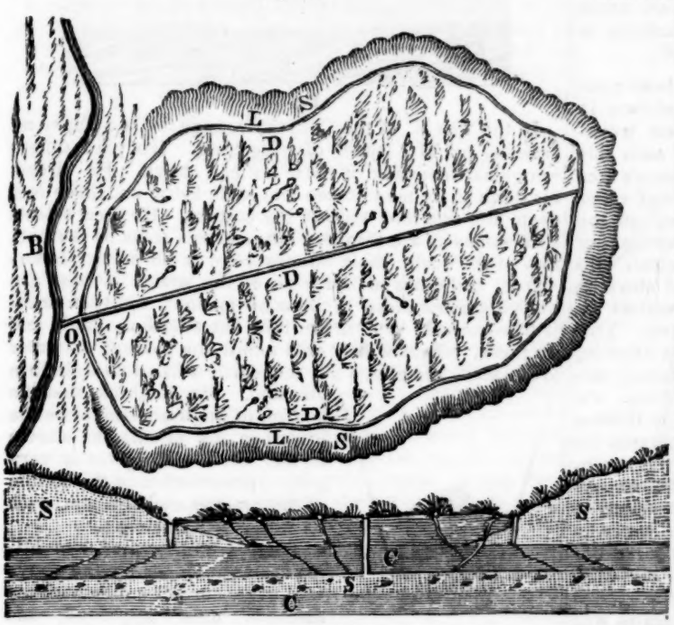


Fig. 68.

minor ones it should be covered, offering as it will in that case, less obstruction to cultivation. The liability of all large drains, such as central ones should be, to frequent obstructions from deposits of matter from the side drains, renders it necessary that in making them this fact should be kept in view, as open drains can be more readily cleared than covered ones, if by accident they are obstructed.

Fig. 68, represents one of these low meadows. D. shows the central drain, L. S. the drain passing around it at the base of the hills to cut off the springs, and O. marks the outlet which conveys the water into the brook B. The cross section given, shows the nature of the strata, with springs rising from the porous layer marked S. into the surface swamp. It is evident then, that a drain around the meadow will not make it dry; to do this, drains must be cut from these springy places to the center or side drains. It sometimes happens that the clay or impervious strata underlying the bog, rests on a porous one that would readily admit the water to flow off could it reach it. A knowledge of the geological structure of the district, will enable one generally to determine this point. When such is the case, if a well or boring is made through the impervious strata as at C. the several drains may be conducted to that point, and the whole made perfectly dry. No boring of this kind should, however, be attempted until the nature of the strata below is understood; as in some cases, instead of sinking, water would be found rising to the surface, and increasing the evil it was intended to obviate.

Thus far our remarks have had reference to the necessity and proper management of drains where the water arises from springs; but there is a large portion of our soils, where from the compact or clayey nature of the subsoil, the rain or surface water does not pass away freely, but remains until carried off by evaporation, or the slow process of absorption in such a soil. Such soils are of necessity cold, as all evaporating surfaces rapidly carry off heat, and the vegetation on them will always be sickly and defective, since the roots of all cultivated plants, if constantly submerged, cannot perform their functions in a proper or healthy manner. They will also be shallow, and resist all attempts at deepening, as clay, in water, even if disturbed by the plow, will soon run together, and become as compact as before. The only way then, to bring such soils into a state fit for production and easy cultivation, to make them deep and fertile, is to thoroughly drain them, as a preparatory operation. It has long been known that soils in which a considerable proportion of clay existed were among the strongest and best, particularly for wheat; but they were so difficult to cultivate, owing to their stiffness and their capability to retain moisture, that lighter soils have received, and justly, a decided preference. Thorough draining, as practiced in England and Scotland, and adopted to a considerable extent by some of the best farmers in this country, has materially lessened the labor of cultivating such soils, and in many cases doubled their value and productiveness. Once drained, they can be deepened, and made permeable to atmospheric influences, the action of manure is greatly increased, and the labor of cultivation proportionably reduced.

The number of drains necessary, their nature and depth, will be depending on the compactness of the soil, the tenacity with which water is retained, or the quantity it annually receives from the surface or otherwise. As a general rule, the drains should be so near each other, that no water will rest on the surface, between them, for any time after rain, or which will not readily pass from the soil into them. The distance may vary from 30 to 60 feet; but so long as the water does not readily leave the soil, or any unnecessary moisture is retained, we may be assured that the full benefit of draining has not been attained. The soils to be benefitted by the system of draining now under consideration, are usually nearly level, and when first cleared are covered with a covering of partially decayed vegetable matter, called muck. Perhaps there is no surer indication of a retentive and cold subsoil, than a thick surface covering of 'muck,' and yet the new settler, unacquainted with the science of agriculture, would be very likely to consider the presence of this substance as one of the most favorable indications of richness and fertility. In commencing a system of draining, one of the first steps is to ascertain their proper direction by leveling. This is in most cases readily determined by the eye alone, but where any doubt can exist, or important consequences are depending on the result, certainty should be secured by the spirit level or square. In no case where considerable water can be expected to flow in them, should the descent be great; as in such case, the wear of the current will soon destroy them, or render them useless. A greater number of drains, by which the water can be conducted in safety into an open one, or one of sufficient capacity to allow it all to pass off without danger, is the better way, where the water is in large quantities, or liable to collect in that state.

The necessity of relieving soils of their surplus water has long been understood, and open drains to remove it from the surface have long been used, but thorough draining, by cutting numerous deep drains, making a water

Fig. 69.

course at the bottom of these, and covering them in such a way as to form no obstruction to culture, is of comparatively recent invention and adoption; and has effected a complete revolution on soils of this class, where the location, and prices of labor and products have rendered such a course proper. The depth of drains should not be less than 30 or 36 inches, and in some cases it may be advisable to go deeper than this. The modes of constructing and filling drains should be determined by the nature of the soil to be drained, and the means of filling at command. In Scotland and England, draining tiles are to a great extent used. These are made in pieces of 14 or 16 inches in length, arched and perforated, and provided with a sole on which the arched pieces rest, and over the surface of which the water flows. Tiles have not been used to any extent in this country; where other materials are so abundant, it is not probable they soon will be. Figure 69 exhibits a specimen of drain tile, and figure 70, a section of drain in which the tile has been laid. In laying tile drain, more care is required in the filling in immediately above them than where other materials are used. Clean gravel is the best material to use for a few inches above the tile.

Fig. 70.

Fig. 71.

The most common, and the least costly mode of filling drains, is shown in figures 71 and 72. In these, the workman places a row of stones on each side of the bottom of the drain, leaving a free space adapted to the usual flow of water in it, over which, and resting on the side stones, are placed larger ones, either flat or round, as most convenient. On these stones, a thin layer of straw is commonly thrown, or fine hemlock or pine branches may be substituted. This is to prevent the loose earth as filled in, from choking the drain by falling between the openings of the stones. On this straw or brush, the earth is thrown with a shovel at first, but afterwards the plow may be advantageously used for filling the drain. When filled, the earth should be heaped a little on the drain, or in settling, a hollow will be left, which will collect the water in a channel, and injure the course below. Properly made in this way, and adapted to the make of the ground and the quantity of water, drains will last for ages, rarely if ever becoming obstructed in the least, never being in the way of any kind of culture, and keeping the soil dry and in good condition.

Fig. 72.

There are some low lands which require draining, so abounding in quicksands, that a stone drain cannot be constructed, their weight soon sinking them, or the sand speedily filling the water-course, aad rendering them useless. In such cases we have known a drain constructed of pine plank, one being laid for the bottom, and two others thickly notched at top and bottom, placed roof-like on this bottom one. With such an inclination as to ensure a current, this drain operates admirably, neither sinking or filling, and will last for many years.

Various other matters have been used for the filling of drains, where stone could not be conveniently procured. Of these, pine or hemlock brush, or small trees, appear to have been the most valuable and durable. Judge Buel, in reclaiming and bringing his farm into culture, constructed drains of which the figures 73 and 74 are a specimen. The ditches were made 18 or 24 inches wide, and three or four feet deep. The brush used was pine saplings, cut into lengths of five or six feet, and these were placed diagonally in the trench, the buts down and towards the outlet. When completed, the ditch was apparently filled. The brush was then well trod down, and the earth thrown in upon it. Fig. 73 shows the trench when first filled—fig. 74 after the earth is thrown on. Drains constructed in this manner, have thus far answered an excellent purpose. When brush is to be used, the walls of the drain must be cut perpendicular.

Fig. 73.

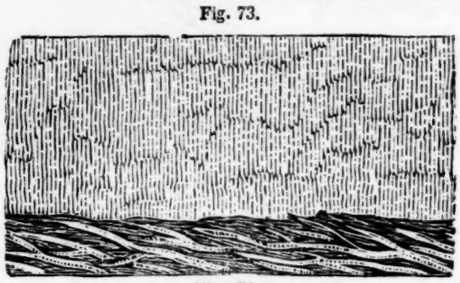
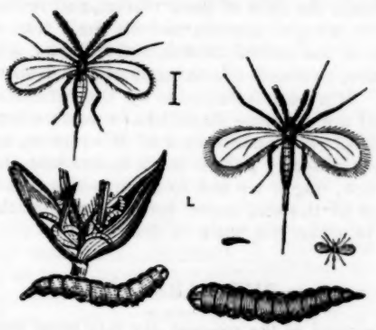


Fig. 74.

In the 2d vol. of the Cultivator, page 56, is a paper on draining by Mr. Ryder of Sing-Sing. His plan differs somewhat from any of those noticed above. He directs his ditch to be made three feet wide at top and three feet deep, and one foot wide at the bottom. He then selects such stones as are thin and flat, and sets them on the bottom of the drain, their thinnest edge or one corner downwards, and close to the edge of the drain. Others are placed against these in the same manner, until the drain is filled across. On these, thin flat stones are laid; and on these, others which will admit the passage of water are placed, and above all, the earth is filled in as before directed. Mr. R. thinks that the bottom of the drain should be the lowest in the middle, as shown in fig. 75, which gives a very good representation of the bottom of the drain as made by him, with its water way of stones.

Fig. 75.

There are other modes of filling drains adopted; but the above will give correct notions of the methods most approved, and which have been ascertained to be successful. But the *method* of draining is not of so much consequence as the draining itself. Let the soil be but freed from water, and it will be seen that a most decided improvement has been effected; an improvement great as it will be permanent. Millions of acres, within a few years, have, from a state of worthlessness, been converted into the most valuable and productive lands of Great Britain by draining, and multitudes of instances may be found in our agricultural papers where equally favorable results have been obtained from the process, in this country. Indeed, we have never learned a single failure, or heard an individual who had commenced the system of draining, and tested its effects, that did not speak of it in terms of unqualified approval. It is only in connection with thorough draining that the subsoil plow can exhibit its full efficacy in deepening and ameliorating soils. Unless the water can pass off readily, the land when moved by the subsoil plow, will soon run together and become compact; but where the water passes off as it falls, the soil remains permeable, the roots of plants penetrate it easily, the fine mold and soluble humus penetrate and combine with the earths, and in a few years, the whole, as low as the plow moves, will be changed from its hard pan nature to mellow fertile soil.



INSECTS IN WHEAT—(Fig. 76.)

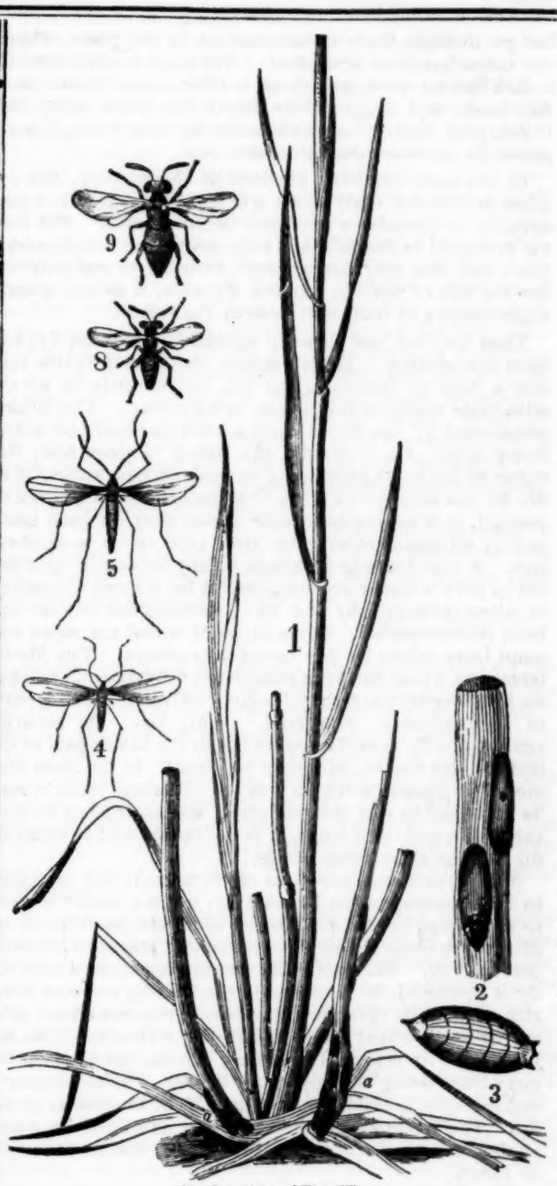
Some fields of wheat in this neighborhood have been much injured the present season by the yellow maggot, the larvæ of the wheat midge, (*Cecidomyia tritica,*) sometimes improperly called the weevil. The parent of this maggot is a small fly, less in size than the common musketoe, which deposits eggs between the scales of the chaff about the time the wheat is in blossom. The eggs are generally, but not always, deposited next the kernel, and the larvæ subsists on the juices which would otherwise nourish the grain. The consequence is, the kernel is more or less shriveled, according to the number of insects which infest the head. We have seen as many as half a dozen maggots around a single kernel, and the whole number in the head could not have been less than fifty, leaving not one sound, plump grain. It is sometimes said that this insect eats into the kernel; but we think this is a mistake—we have seen no instances of the kind—the worm is a simple maggot, not at all calculated for gnawing or boring.

This insect was first noticed in this country about the year 1831 or '32, though it had been known in Europe many years before. In those parts of this country where it was at first most abundant, we believe it has been for a few years past diminishing, We are informed that this is the case in Vermont, New-Hampshire and Maine. It seems to have been, in its first appearance, most destructive to spring wheat, but lately has attacked the winter wheat. No successful remedy has yet been suggested against its attacks. Some have advised the suspension of wheat culture for a few years in the infected districts. Perhaps this would be the best course, as the enemy would thus be starved out and annihilated. It has been remarked that in spring wheat, the early sown is generally most affected, from the circumstance of its coming into bloom about the time the fly is ready to deposit its eggs. Hence where spring wheat is grown, the plan of sowing *late* has been followed with advantage. That sown the latter part of May or first of June, has generally escaped this fly, but it is very liable to rust when sown so late.

In regard to winter wheat, the *earliest* sown is generally most exempt from attack—it gets past bloom and out of the way before the fly is ready to deposit its eggs. Mr. Thomas Hillhouse, an extensive farmer of this neighborhood, informs us that the portion of his wheat which was sown the first week in September is saved, while all which was sown after the 25th of that month, is nearly lost. Mr. Hillhouse thinks, that in a season like the present, the wheat must be sufficiently early to pass out of the "milk" before the 20th of June, to be safe from this insect.

Some of the worms pass into the pupa or chrysalis state, in the head of the wheat, and are winnowed out with the chaff, but it is probable the greater number undergo transformation in the ground; for this reason it would be bad policy to sow wheat on the same ground two years in succession. Kollar says there is a parasitic insect allied to the family of Ichneumons, which preys on the midge, and seems designed by nature to keep it within proper bounds. We have not seen this parasite, and do not know that it has been found in this country.

Fig. 76, at the head of this article, copied from Kollar, shows the wheat midge in different stages, both of the natural size and magnified. One section of the cut shows several of the larvæ within the chaff which encloses the wheat kernel.



Explanation of Fig. 77.

1—Wheat stalk with the larvæ of the Hessian fly deposited—three of the stalks punctured by the Ichneumon, *Ceraphron*—natural size, 3-20ths of an inch.—*a. a.* larvæ and pupa.
2—Section of the wheat stalk, with the larvæ magnified.
3—Larvæ advanced to the pupa state, magnified.
4, 5—Male and female Hessian fly, *Cecidomyia destructor*, magnified.
8, 9—Male and female Ichneumon, *Ceraphron destructor*, magnified.

THE HESSIAN FLY, (*Cecidomyia destructor,*) fig. 77. This fly has been known in this country for the last sixty years, and is probably the cause of more injury to the farmer, taking the whole country together, than any other insect. The parent fly resembles the *C. tritici*, just described, though their habits are widely different—the one depositing its eggs in the head of the grain, and the other near the root of the young plant. The infected plants may be readily known while small, by their dull lead color. Soon after the wheat appears above the ground, the Hessian fly deposits its eggs on the upper or inner side of the leaf near the stem, usually above the first or second joint. The eggs are very small, and can scarcely be discerned by the naked eye. In the course of four or five days, if the weather is favorable, the larvæ, which are of a reddish white color, make their appearance, and work their way into the sheath formed by the leaf around the stem. They remain in the larvæ state a longer or shorter time, according to the state of the weather. They do not change their habitation to pass into the pupa state,

but go through their transformation in the place where the larvæ has been nourished. The pupa is enveloped in a dark brown case, and from a little resemblance to a flax-seed, this stage of the insect has been called the "flax-seed state." As soon as the fly comes out, it prepares for another generation and dies.

In the more southern portions of the country, the fly often attacks the early sown wheat in the fall, and a generation is sometimes produced before winter. The larvæ produced in the fall, are supposed to be uninjured by frost, and that they are brought forward to maturity by the warmth of spring. In the fly state, it is said a very slight degree of frost will destroy the insect.

Thus far, the best remedy against the Hessian fly, has been late sowing. By this means, the farmer avoids raising a crop of insects in the fall, to be ready to go on with their work of destruction in the spring. The injury occasioned by the fly, is most severe on poor and indifferent land. On rich soils, the injury is much less; the vigor of the roots continuing to push up new stalks, after the fly has stopped its work. Where the fly is known to prevail, it is advisable to sow wheat only on good land, and by no means to sow the same land twice in succession. A top-dressing of ashes, or any substance calculated to give a quick growth, would be a great advantage to wheat attacked by the fly. Burning the stubble has been recommended. Some kinds of wheat are more exempt from injury by this insect than others. The Mediterranean wheat has been considered "fly-proof," and has on this account been considerably cultivated in some parts of Pennsylvania, Maryland, Ohio, &c. Its security against the fly is said to be owing to the lower part of the leaf, or the sheath, adhering so closely to the stem that the larvæ cannot work its way in. In some cases it may be an object to sow this variety of wheat, though from its thick skin and dark color, it is not considered so valuable for flour as some other kinds.

Many years ago there was much controversy in regard to the economy of the Hessian fly, but the matter seemed to have been pretty well settled until the publication of Miss Margaretta H. Morris's communications on this subject in 1840. She contended that the egg from which the fly is produced, is deposited in the kernel, and as a security against the ravages of the insect, recommended procuring seed wheat from uninfected districts. This has been tried in repeated instances, but did not prevent the crop from being destroyed by the fly. Miss Morris is undoubtedly mistaken in her notions of the habits of the fly. The larvæ of which she speaks, as having been seen in the kernels of wheat, must have been that of some other insect.

The Hessian fly is assailed by several parasitic insects, the chief of which is the *Eurytoma destructor*, (*Ceraphron destructor* of Say.) "This," says Dr. Harris, "has often been mistaken for the Hessian fly, from being seen in wheat fields, in vast numbers, and from its being found to come out of the dried larvæ skin of that fly. In the month of June, when the maggot of the Hessian fly has taken the form of a flax-seed, the *Eurytomia* pierces it, through the sheath of the leaf, and lays an egg in the minute hole thus made. From this egg is hatched a little maggot which devours the pupa of the Hessian fly, and then changes to a chrysalis within the shell of the latter, through which it finally eats its way, after being transformed to a fly. This last change takes place both in the autumn and in the following spring. Some of the females of this, or of a closely allied species of *Eurytoma*, come forth from the shells of the Hessian fly, without wings, or with only very short and imperfect wings, in which form they somewhat resemble minute ants. Two more parasites, which Mr. Herrick has not yet described, also destroy the Hessian fly, while the latter is in the pupa or flax-seed state. Mr. Herrick says, that the egg-parasite of the Hessian fly is a species of *Platygaster*, that it is very abundant in the autumn, when it lays its own eggs, four or five together, in a single egg of the Hessian fly. This, it appears, does not prevent the latter from hatching, but the maggot of the Hessian fly is unable to go through its transformation, and dies after taking the flax-seed form. Meanwhile its intestine foes are hatched, come to their growth, spin themselves little brownish cocoons within the skin of their victim, and in due time are changed to winged insects, and eat their way out. Such are some of the natural means, provided by a benevolent providence, to check the ravages of the destructive Hessian fly. If we are humiliated by the reflection that the Author of the universe should have made even small and feeble insects the instruments of His power, and that He should occasionally permit them to become the scourges of our race, ought we not to admire His wisdom in the formation of the still more humble agents that are appointed to arrest the work of destruction."

THE DARK AGES.

The learned of the present day talk most complacently of the dark ages, those times when the great mass of mankind was not only ignorant, but contented with their ignorance, and looked with most suspicious glances on any one who dared to think or act a little in advance of the multitude. The cause of this is easily explained. Knowledge in an individual, is a constant reproof to those who have it not; and always produces in them, one of two effects, a desire for similar acquisitions, or an intense hatred of the possessor. We are accustomed to speak as though these dark ages had passed; but the following from the Farmer's Cabinet will show that so far as agriculture is concerned, there are places where the dark shadows are still lingering. We hope for the honor of our country, such places are not numerous. The extract is from the letter of a gentleman, who was endeavoring, in connection with his ordinary business, to obtain a few subscribers for that valuable paper.

"I have lately taken a ride of twelve miles from —— and returned by a different road. I saw but one building that could be construed into an apology for a barn. 'How do you manage without barns,' said I to one of the best farmers I met with. 'Oh,' said he, 'we have no use for barns, we have nothing to put in them.' 'How do thresh your wheat?' I inquired: 'We do not make any wheat.' 'Your rye then?' 'We do not make any rye.' 'What do you do with your hay?' 'Neither do we make any hay,' was his reply. 'What do you give your horses during the winter?' 'The tops and blades of the corn.' 'And how are your cows provided for?' 'We let them take their chance in the fields among the stalks; they make out to live till spring.' The same farmer told me he had not manured an acre of land, nor a hill of corn for nine years! 'And what,' I asked, 'is an average crop of corn?' 'A barrel to the thousand hills.' 'And how many hills do you reckon to the acre?' 'Two thousand.' 'And how many bushels to the barrel?' 'Five.' 'Then your crop of corn is ten bushels to the acre.' 'Yes, we are satisfied with that, and half of us do not get that much.' 'Have you marl here,' I inquired. 'Yes, we have plenty of it three or four feet below the surface, but it is too much trouble to dig it.' I mentioned your Poudrette—'O,' said he 'a dollar and fifty cents a barrel, would make it cost too much.' Seeing a little girl busily engaged in shaking a quart bottle, I asked what she had in it? She answered *cream*, and that she was making butter! I conclude, therefore, that a farmer who has a horse and cart—a wooden plow, rope traces, and a corn-husk collar, and a quart bottle to churn his butter in, feels himself amply prepared for conducting a farm in these *diggins*, without wasting a dollar a year in paying for the Farmer's Cabinet!" "A most legitimate conclusion truly," adds the Editor.

It is astonishing what an obstinate adherence to antiquated and ruinous opinions may occasionally be found among farmers. We know a man who resided on a fine farm some fourteen or fifteen years, and who glories that he has never sown a bushel of plaster and scarcely a bushel of clover seed upon it during that time. The practice of manuring he discountenanced wholly; and as a natural consequence, his farm originally of the best quality, had become so reduced, that he was obliged to dispose of it to satisfy his creditors. Such men should have lived centuries ago, or perhaps, so far as the march of improvement is concerned, they might find a suitable residence in the district described by the correspondent of the Cabinet.

Foreign Correspondence.

MR. NORTON'S LETTERS—No. II.

Laboratory of the Ag. Chem. Association,
Edinburgh, July 1, 1844.

MESSRS. EDITORS—I regret that my excursions during the last two or three weeks, though most interesting in other points of view, have not generally been through a highly cultivated part of the country, and have not therefore given me many new facts of importance in Agriculture. While in Yorkshire, however, for a few days, in company with Prof. Johnston, I visited the farm of Mr. Bates, so well known as a successful breeder of Short Horns. As you have undoubtedly had descriptions of his stock from those far more competent to judge of their merits than myself, I will only say that they seemed to me more nearly perfect in many respects, than any animals I have ever seen. I was especially struck with the knowledge which Mr. Bates evidently possesses of the subject to which he has devoted much of his life. Every American agriculturist who visits England ought to see this stock, as affording a notable example of the effect of care and judgment in breeding. From Mr. Bates' courteous manner and hospitable attentions to our party, it would seem safe to ensure a kind reception of any gentleman who should visit Kirkleavington.

Since coming to Edinburgh I have received several numbers of the Cultivator, and in those for May and June I noticed paragraphs founded on statements in English papers, respecting Guano from the islands of the North Sea, intimating that they were expected in a great degree to supercede those from Africa and Peru, and also that like deposites might be found on Newfoundland and other islands of the North American coast. Prof. Johnston has kindly furnished me with information on this point, which may be interesting and useful to your readers. I enclose the results of analyses of two specimens sent from the Hebrides as samples of these guanos, and by way of contrast, those of some of the best from Africa and South America.

Analyses of the Hebrides Guanos.

	No. 1.	No. 2.
Organic matter and water, with a slight trace of ammonia,	70.44	75.51
Common salt, sulphate of soda, &c.,	3.57	3.50
Phosphate of lime, of alumina and of iron,	1.53	2.43
Carbonate of lime, magnesia, &c.,	1.47	1.13
Siliceous matter, (pieces of quartz, and a little mica,)	22.99	17.43
	100.	100.

A momentary inspection will satisfy us that no extraordinary fertilizing properties are possessed by these deposits, and the analysis also proves, not only that the rains and storms have carried away the ammoniacal and other soluble salts if ever there, but that the phosphates never were present in large quantity, for they being insoluble would still have remained. It is thus evident that these so called guanos, consist chiefly of vegetable remains and quartz, and contain a very small proportion of the dung of birds, even in the Shetland caves, whence some specimens have been brought. That they are not to be compared to the true guanos as to fertilizing properties, the following analyses will show. The ammonia separately, is not determined in any of these. It usually amounts to from 4 to 12 per cent.

Analyses of two Guanos, both African.

	No. 1.	No. 2.
Water,	17.41	16.79
Organic matter and ammoniacal salts,	55.33	52.83
Common salt and sulphate of soda,	4.92	4.90
Phosphate of lime and a little phosphate of magnesia,	18.23	22.85
Carbonate of lime, magnesia, &c.,	3.54	1.50
Siliceous matter,	0.57	1.13
	100.	100.

Analysis of two Guanos; No. 1 from the Island of Ichaboe on the African coast, and the other from Peru.

	No. 1.	No. 2.
Water and volatile ammonia,	15.27	3.14
Organic matter and ammoniacal salts,	51.44	63.52
Salts soluble in water, consisting of sulphate and muriate of soda,	5.50	5.02
Insoluble siliceous matter,	0.57	1.16
Phosphate of lime and a little phosphate of magnesia,	21.11	22.20
Carbonates of lime, magnesia, &c,	6.11	4.96
	100.	100.

The Peruvian guano, No. 2, is remarkable for the small quantity of water present, and both of the two last for the very large proportion of phosphates. Is it wonderful that these manures, compounded almost entirely of substances so beneficial and essential to a l crops, should be sought, as is the case in this country, with great avidity. The supply does not equal the demand. A cargo of 1000 tons which arrived at Liverpool a short time since, sold at once, at from ten to ten and a half pounds per ton. Such as the dry Peruvian, No. 2, would readily bring thirteen pounds, or sixty-two and a half dollars, and this too while nearly four hundred vessels are engaged in, or fitting out for this business. The above analyses were selected from about seventy which have been made of different specimens, during the past year, in this Laboratory. From the great demand, it follows, of course, that adulteration is practiced, and this too most extensively. One person purchased some, which was found to contain about 70 per cent of chalk. With the addition of a little ammonia to give the smell, and of some finely ground spent tan-bark to give the color, it is quite easy to imitate the appearance of guano sufficiently well to deceive the unpracticed.

It is hoped that this revelation will not open a new branch of speculation to any of my ingenious brother Yankees, for our reputation in that way is quite high enough here already. Yours very truly,

JOHN P. NORTON.

By the arrival of the Acadia steamer at Boston on the 18th ult., we are furnished with our regular files of the Mark-Lane Express, New Farmer's Journal, Farmer's Herald, Gardner's Chronicle and Agricultural Gazette, to the 3d of July—also the Farmer's Magazine, London, and the Journal of Agriculture, Edinburgh, for July. By this arrival, we also received for the first time, the Irish Farmer's Gazette; the Ayrshire Agriculturist, and the Doncaster, Nottingham and Lincoln Gazette—valuable papers, which we shall be glad to receive regularly hereafter.

THE WEATHER, CROPS, &c.—In England, the weather had continued generally dry, up to the 25th of June, about which period copious showers occurred in many places. Wheat is generally good, but *spring* grains and grass have suffered much from drouth, and will give but a poor yield. The scarcity of grass has occasioned the markets to be crowded with *store* stock, the prices of which range very low. Some anxiety is still manifested among the English farmers, in regard to the increased importation of foreign live-stock. Large exports of the finest English animals have been made, showing that the continental graziers and flock-masters are using every effort to improve their stock in order to compete successfully with those of Great Britain.

American beef, pork, and cheese, was selling in the English ports in considerable quantities at fair prices.

In Scotland and Ireland, there has not been so great a deficiency of rain. The wheat is generally good, and other crops it is hoped will be at least middling.

The Great Show of the Royal Ag. Society of England, is to be held at Southampton, July 23, 24, 25, 26—that of the Highland Society at Glasgow, Aug. 7, 8, 9—that of the Irish Society, at Dublin, Aug. 14, 15. At the Irish Exhibition, a "challenge cup," of the value of 100 sovereigns (near $500,) given by P. Purcell, Esq. is to be awarded for the best animal in the neat cattle classes. The premiums to be awarded by the Highland Society, amount to $7,500, being the largest list ever offered.

FOOD OF LABORERS IN HARVEST.—A writer on the comparative merits of different modes of reaping, in the last number of the Transactions of the Highland Agricultural Society, says, "I deprecate the practice of overtasking young women in gathering heavy crops, as cruel oppression. Half the number of those hired to gather, not being habituated to active employment, it is unreasonable to expect them to do as much at an occupation, perhaps the most active that falls to the lot of women in field labor, as those inured to it. To alleviate this hardship, for the first week of harvest, especially if the weather be warm, my plan is to make the reapers rest

twenty minutes whenever I perceive it requisite, and I find it a plan both humane and profitable." In a note, the writer says—"It deserves to be noted that the food of the reapers, whose work has been stated above, consisted of oatmeal porridge and milk for breakfast and supper, and potatoes for dinner, with abundance of oat-cakes and milk at every meal. All whom I know that have harvested in the south, [England, we presume,] assure me that they cannot do so much work there, because the diet consists of porridge and milk, with bread at dinner only."

What would women in this country say to laboring in the harvest-field, even under the "*humane* plan" of this writer? and what would be thought of the farmer in this country who should feed his harvest-hands on nothing but "porridge and milk," potatoes, and oat-cakes? Let us be thankful that women are not here made "hewers of wood and drawers of water," and that our laborers are supplied with those articles of animal food which contain the most substantial elements of nutrition and strength.

LIME.—In "Sketches of East Lothian Husbandry," it is said lime was formerly used extensively, it having been found of the greatest efficacy on strong clayey land. It is now only employed to a very limited extent, more than half the lime-kilns at present lying idle. This, it is said, arises from the circumstance that land once thoroughly limed, derives comparatively little advantage from, and may be injured by a further application of this substance for a considerable period after the first dose.

CULTIVATION OF TURNEPS.—The editor of the London Gardener's Chronicle, speaking of the fertilizing tendency of the turnep crop, says—"We have seen fields so cultivated that a handful of earth could not be taken up in them which was not full of these silken-looking fibres (roots); and so vigorous was the growth of the crop in that part of the field, that on digging a pit, these fibres, (recognized by their appearance and taste,) were found to have penetrated to the depth of *five feet!*"

WHEAT IN DRILLS.—From the same authority as that above quoted, we learn that 100 acres of wheat together, had produced by the drill-mode of sowing, according to the estimation of the best judges, five quarters (40 bushels) per acre.

ADULTERATION OF MANURES.—Great fraud is practised in England by the adulteration of some kinds of manures. By an article on this subject in the Gardener's Chronicle, it appears that a substance which had been sold as *bone ash*, was found on analysis to contain *eighty-five per cent* of carbonate of lime, or chalk. In this case the farmer had been paying 10*l.* for every thirty shillings worth of manure. In other cases the bones had been increased in weight by soaking them in water—making, in every ton of bones, about seven hundred weight of water. Substances sold as *guano*, have been found to contain seventy-five per cent of brick-dust—and in other instances a large proportion of saw-dust, clay, or ground bark. John Bull might offset this against Brother Jonathan's wooden pumpkin-seeds and horn flints.

VALUABLE COW.—Mr. James Geach, of Penvounder, in the parish of Sithney, has a cow that, with ordinary keep, produced last year 350 lbs. of butter. She calved in March last, and there is every probability that she will produce as much this year.

GOOD FARMING.—A correspondent of the Agricultural Gazette, says—"Good productive farming does not depend upon these things, so much as upon draining, deep and frequent plowing, clearing the land from all other plants but those you desire to grow, early seeding, and last, but not least, preserving every decayed vegetable matter that can be found, either on or off the farm, and mixing it judiciously with the excrement of a well-selected stock of animals adapted to the character of the soil, preserving the mixtures in properly constructed yards and tanks."

COMPOSTS.—The same correspondent recommends, from his own experience, a compost made as follows, the quantity mentioned being sufficient for one acre:—"Put 8 bushels of crushed bones into a dry shed, and add from time to time, as they come to hand from the farm-house, or as they can be procured elsewhere, 24 bushels of ashes (wood are the best,) and empty upon the mass, from day to day, the contents of the chamber utensils; to be stirred and mixed occasionally. At least 6 or 8 acres may be thus manured at a farm consisting of as many persons."

TURENP-FLY.—I have found that half an ounce of sulphur mixed with a pound of turnep-seed, prevents the ravages of the fly. The experiment is easy, and has not been known in any case to fail. I have used this plan with success for several years, and have not lost a single turnep. It has been tried on a small scale in my immediate neighborhood, and in no case has it failed to protect the young turnep from the fly.—*Ag. Gazette.*

MANURING WITH LOAM AND CLAY IN A ROASTED STATE.—Professor Chs. Sprengel recommends burning or roasting clay for manure. After alluding to the idea that is by some entertained that the use of burnt clay would render the use of dung superfluous, he says:—"Although this assertion is not borne out by fact, still it cannot be doubted that by roasted clay or loam one substance is conveyed to the soil, which is a most important ingredient of dung, viz. nitrogen. Because, if a loam or clay is roasted, which contain already protoxide of iron or manganese, or in which these substances are formed during burning from the oxide of iron or manganese, ammonia will be formed the moment that water and the nitrogen of the atmospheric air have access, as the protoxides of iron and manganese decompose the water and combine with its oxygen into an oxide, by which the hydrogen will be set free, which will then unite with the nitrogen of the air into ammonia, the latter being either condensed in the pores of the clay, or received by the moisture which is at hand. That this process really takes place, I have found by many experiments, on which account I recommend that sort of clay or loam for roasting which are rich in iron or manganese. A calculation made by me shows, that if the clay or loam used for the manuring of one acre contains 1000 lbs. protoxide of iron or manganese, there is a possibility that 100 lbs. of ammonia will be formed, which (as we know already) will produce a great effect."

LUCERNE.—In no former period have I experienced the value of lucerne, as during the present protracted drouth; I have now nearly finished my first crop, which I have been cutting green for horses and cows, much of which measures in height 36 inches, and is very thick on the ground; my second crop is from 24 to 26 inches high, and equally as thick a plant as the first. I am now about cutting this for hay, and I think I have more weight per acre of my second crop than is grown this season on four or five acres (first crop) of the general average of pasture grounds now mowing. It does not appear to be in the least affected by the severe drouth, which I attribute to the very great depth the roots run down; for I have heard (and which I doubt not) instances of lucerne roots being found from 10 to 14 feet below the surface. I would again urge all, whether farmers or not, to try and grow lucerne, for of all summer food for horses this is the very best; I am inclined to say likewise nothing can be better food for cows, for my own have lived entirely upon it the last three weeks, my feeding pasture being quite burned up for want of rain, and have produced a full quantity of butter.—*Mark Lane Express.*

REFUSE OF THE TANNERRY.

"D. X." makes the following inquiries:—"In what manner can the refuse of a tannery, as hair, bits of skin and pieces of flesh that are taken from the hide, best be converted into a manure, to be applied to lands fitted for wheat or corn?

Would such refuse mixed with barn yard manure, ashes and charcoal, applied to land which is to be sown with wheat have a good effect?"

The substances alluded to, will undergo sufficient decomposition to render them good manure if laid in a pile during the summer. Ashes would, we should think, be useful in preparing the heap.

THE STRAWBERRY.

The excellence and value of this fruit are so well known as to need no recommendation. This is a good season of the year for transplanting. Mr. Kenrick's description of the mode of cultivation, as given in the "New American Orchardist," is as follows:

"For the reception of the plants, the grounds may be trenched twenty inches deep, and a quantity of half-rotted manure incorporated to half this depth. For economy, it is also recommended in the final transplanting, to set the plants in beds of four rows each; the rows running in a longitudinal direction; the distance between the beds varying from two to two and a half feet, according to the roots to be planted, as some varieties require much more space than others. During the first year, the runners to be carefully destroyed before they have taken root. Around such as show fruit, grass or straw is placed; (Keen recommends the same, for the plant derives its name from this circumstance.) This protects alike the soil from washing rains, from a scorching sun, and the consequent evaporation of its moisture; it protects the fruit from becoming soiled. But as soon as the fruit is gathered, this covering is to be removed, and the soil kept clear of weeds by the hoe till autumn. In autumn, all the spaces, including the alleys, to be dug carefully over with a pronged fork, so as not to injure their roots. Both Keen and Mr. Knight, however, direct manure to be applied before this last operation is commenced, and Mr. Knight, has particularly cautioned against digging so deep as to disturb the roots, as it weakens the force of the plants. The second summer Lindley states that the plant will bear their best crop and finest fruit; the beds and outside of the alleys should be covered with mown grass, or with straw, three or four inches thick; by this method, he states he has found the fruit not only more abundant, but of finer quality."

"In the vicinity of Boston the following mode is often adopted:—The vines are usually transplanted in August. The rows are formed from eighteen inches to two feet asunder. The runners, during the first year, are destroyed. In the second year they are suffered to grow and fill the interval, and in the autumn of that year, the whole of the old rows are turned under with the spade, and the rows are thus shifted to the middle of the space. The same process is repeated every second year. Another mode which may be recommended generally, is to plant the strawberries in rows thirty inches asunder and nine inches distant in the row, and suffer the vines to extend to the width of eighteen inches, leaving twelve inches for an alley; allow eighteen inches width to the alleys, and three feet asunder to the rows; and to form new beds every three years, or never suffer the bed to exist over four years; and to plant out in August in preference to Spring." Some good horticulturists, however, prefer planting in spring.

Much has been said about the sex and character of the strawberry. It is defined by botanists as belonging to the order of plants, (*Icosandria Polyginia*,) which have the male and female organs in the same flower,—yet some have contended that it is *diœcious* in its character—that is producing the male and female organs on different plants. The theory advocated by Mr. Longworth, of Cincinnati, and which is probably correct, is, that every blossom contains both the male and female organs in a greater or less degree of perfection; but that in some varieties the different organs are not developed in the due proportion to insure fructification. In some kinds, the female organs, (pistils) are defective, in others, the male, (stamens.) Those varieties in which the *female* organs are disproportionably developed, though when left to themselves they are generally sterile, will often produce fruit of extraordinary size when brought in contact with plants in which the *male* organs are largely developed; but there are some varieties in which the female organs are so defective, and the male organs are so much predominant, that they cannot be fructified, and are, therefore, under all circumstances, totally barren.

A little experience will soon enable any one to distinguish the male and female organs of the strawberry—or the staminate and pistilate flowers. Mr. Longworth, in a communication for the Western Farmer and Gardener, illustrates this part of the subject by the following anecdote. He says he was trying in vain so to express himself as to enable a person not a botanist, to distinguish the male and female plants by the blossom, when a young son of his German vine-dresser, conveyed the idea in a few words. "Why," said he to the person, "you not understand! The husband he always have de *beard*, de frow she have none." Mr. Longworth adds, "a quire of paper could not give a more definite description. In the male plant, the face of the flower is covered by a long yellow beard, that almost hides it. The female has the beard, but so closely *shaven* as not to be perceptible to the naked eye. The male blossom is generally also, of double size."

Mr. Longworth recommends planting the pistilate and staminate varieties in separate beds, two and a half feet apart, "every fifth bed being a male." If they are planted in the same beds, the male, or staminate plants, soon over-run the others, and no fruit is obtained.

As to varieties, Mr. Breck of the N. E. Farmer, who has had much experience in the cultivation of this fruit, says—"after having tried a multitude of sorts, we should recommend for common cultivation, *Hovey's Seedling*, as the very best for the general crop—*Early Virginia* for early use, and the *English Wood* for late. Many new and highly extolled varieties have disappointed the expectations of the horticulturist."

FARMING ON THE AROOSTOOK.

Now that the North-eastern boundary is finally settled, the best portions of the former "disputed territory" are becoming rapidly settled. From all we can learn, we have little doubt that our neighbors of New-Hampshire and Maine, would find the inducements for emigrating to the Aroostook Valley, equal in many respects to those of any other section. A correspondent of ours, who has purchased and is now improving a tract of land there, with a view to a residence, writes as follows: "The soil lies on a lime-stone rock, and is from one foot to two feet deep, of different colors, such as light yellow, chocolate color, light gray or black mold, like old barn-yard manure. These four varieties are often met with in the distance of two rods, and the settlers like that land best which consists of these different kinds, so located as to mix together in cultivating. The crops, when I was at the Aroostook last August, (1843) were superior in appearance to any thing I had ever seen or *conceived* of. The oats were up to a man's chin—the wheat about as high, with heads seldom less than four and sometimes *nine inches* long—and the barley from four to four and a half feet high. The potatoes were very well advanced, and of that peculiar richness and mealiness which no potatoes have, not raised in or near the 'Provinces.'"

Indian corn is not cultivated very extensively on the Aroostook; still there is some raised there, and our friend writes that he is informed by a man who is operating there this season, that "the corn there was knee high the first of July, and looked as it used to in Kennebec when growing on a *dung-heap*."

CEDAR SHINGLES.—The Springfield Gazette says—"Mr. John Bliss of Wilbraham left at our office, last week, some shingles that were taken from the roof of his barn, on the 9th inst., where they had remained 104 years, having been put on by his grand-father, Ensign Abel Bliss, in May 1740. The shingles were of 5-8 thickness, made of cedar which grew on the farm of the then owner, and during the time stated had covered the west half of the north roof, the other part having in that time been *twice* covered with pine shingles. They were 20 to 24 inches long, and six inches exposed to the weather. The roof boards were in suitable order for re-shingling."

CATTLE SHOWS THIS SEASON.—New-York State, at Poughkeepsie, Sept. 18 and 19.——Hampden Co. (Mass.) at Springfield, Oct. 16, 17.——Coshocton Co. (O.) Oct. 25.——Newberry (S. C.) Sept. 25.——Philadelphia, on the Germantown turnpike, 3 miles from the city, Oct. 16, 17.——Kings Co. (N. Scotia) at Kentville, Sept. 26.

THE LATE DR. SAMUEL L. MITCHILL,

Of the city of New-York, and his labors in aid of Agriculture.

NUMBER I.

MR. LUTHER TUCKER—Your late and lamented associate Willis Gaylord, commenced a notice (Cultivator vol. 10th, p. 170) of the essays contained in the printed volume of the "Transactions of the first New-York Agricultural Society," and of the men who organized it. Among other remarks he observes that "the leading spirits of this association were men of powerful minds, far-reaching in their views, *and in their practice evidently in advance of their age.*" (Anno. Dom. 1791.)

In my early days I had a taste and inclination to engage in agriculture; but circumstances diverted me into another course, and kept me so for many years, until declining health impelled me to rural pursuits, and the fulfilment of the wishes of my earlier life. It was then I read and studied the old agricultural society's Transactions, and admired the writings of Livingston, L'Hommedieu, DeWitt, De La Bigarre, and others. Associated with these worthy men was the learned SAMUEL L. MITCHILL, M. D., with whom the writer was personally acquainted, and whose labors in aid of agriculture, and in agricultural chemistry, it may be interesting at the present day to notice.

The old Agricultural Society was organized in 1791, and the first address was delivered by Dr. Mitchill in 1792, before the members of the society and the state legislature then holding their sittings in the city of New-York. It was incorporated in 1793, and the first volume of Transactions was published at Albany in 1801. It thus appears that it required ten years before materials could be collected sufficient to form a volume. When the society was organized, it was shortly after the revolutionary war, when agriculture was in a depressed condition, when the settled parts of the state were comparatively limited, and when the country had not recovered from the ravages of war, particularly the southern part which had been in possession of the enemy. The materials however which form the first volume of the Transactions were written by men who loved their country, true patriots, men who were both practical and scientic, some of whose writings may be read with advantage, even in these days of increased population, extended agriculture, and scientific farming.

We find by examining the volume of Transactions that the society was not purely agricultural. The title runs thus—"*Transactions of the Society for the promotion of Agriculture, Arts and Manufactures, instituted in the State of New-York.*" Thus soon after the war of independence, our wise men in the agricultural community, saw the necessity of encouraging the mechanic arts and manufactures, as well as agriculture, as it had been the policy of Great Britain not to let "even a hob nail" be made in the colonies. This policy in relation to these United States was continued by the British after the war. And it is in the recollection of many, as well as of the writer, when English merchants deluged the country with their manufactures of wool, and cotton, and iron, and leather, and many other articles which our own citizens can now manufacture as well as they.

Of the five addresses before the the society, as published in their volume of Transactions, Dr. Mitchill delivered two, viz: one in 1792, and one in 1798. In the winter of 1791–2, the legislature met in the old City Hall in the city of New-York, and at that session he was a member of assembly from the county of Queens, and though young, his agricultural, his scientific and general knowledge, led him to associate with men of learning, and he

was very active in the organization of the first State Agricultural Society, of which he was for several years the corresponding secretary. He was called upon to deliver the inaugural address, at the organization of the society in 1791, and we find it full of scientific and practical information. Indeed it was so well received by those who heard it, (among whom was his preceptor Dr. Samuel Bard,) that it caused him to be appointed Professor of *Chemistry and Agriculture*, in Columbia college, New-York, of which Dr. Bard was a trustee. Before proceeding to examine his addresses and agricultural essays we will give a sketch of his life.

Dr. Samuel L. Mitchill was an extraordinary man. He was the maker of his own fortune and reputation. He began the world with impaired health, no money, and few or no influential friends. When he returned from Europe in 1787, his fortune consisted in his medical education, but he was unable to commence the practice of that learned profession in consequence of (hemoptysis) bleeding from the lungs, which occurred in London a short time previous to his return to his native country. He accordingly retired to the family residence on Cow-neck, in the township of North Hempsted, Queens county, and state of New-York, where he joined his father and brethren in agricultural pursuits. There he put theory into practice, and as far as his health and strength would permit, united with them in renovating the farm, which had been impaired by the British troops who had encamped upon it, and committed depredations without restraint.

This farm is still in possession of the family, and is owned by Judge Mitchill, the Doctor's only surviving brother, who has been long known as an able practical farmer, and who has cultivated it from his youth. It was devised to the family by Dr. Samuel Latham, (the maternal uncle of the Judge) who died in 1781. The British obtained possession of Long Island in 1776, and held it in military subjection the entire period of the revolutionary war, and a part of the time their troops occupied Dr. Latham's farm. The Hessian soldiers under Col. Wormzer encamped on it, and the adjoining one of Benjamin Akerly, both of whom were revolutionary whigs, and were obliged to entertain their enemies, who occupied their houses and lands, and destroyed their trees and fences. Other friends of the country suffered in the same manner, and were probably designated by the tories of those days, who took delight in seeing the British despoil the fair possessions of the advocates of the revolution and of civil liberty. It was on that farm that Dr. Mitchell, after the war, became a practical agriculturist, and hence we shall find in examining his writings in relation to husbandry, that they are not merely theoretical.

Previous to the completion of his medical studies at the celebrated school in the capital of Scotland, Dr. Mitchill wrote a letter to his father Robert Mitchill, on the industry of the Scotch, their employments and agricultural skill. This letter we have been permitted to read, and make the following extract, which will commend it to the perusal of every industrious farmer.

The letter is dated at

Edinburgh, June 1st, 1786.

"A spirit of industrious enterprise prevails much in this country at present; for in order to incite the people to industry and excellence, rewards are offered for almost everything. Premiums are distributed to those who embark in the *whale-fishery*, and to such as employ themselves in the *capture of herrings*, and to such *as spin the best and finest thread*, and to others who are *most expert in plowing land*, and even to musicians who can play most completely on the *Highland bag-pipe*. The good effects of such liberal offers are very manifest; for they promote ship building, employ carpenters and sailors, procure fish and oil, advance manufactures, *improve agriculture*, and reward labour. By such means, Scotland, notwithstanding its natural disadvantages, is advancing rapidly to improvement, and this is conspicuous as well in the advancement of arts and sciences, as in the refinement of manners among the inhabitants. Distinctions between people are here very great and striking, for they who have fortunes and estates live in elegance and splendor; they who have neither, dwell in dependence, poverty, filth, and apparent wretchedness; but in spite of all this, half an acre of land here answers a better purpose, and produces more than ten times as much as with you, because every inch of it is *manured* and cultivated to the best advantage. The Americans are in general bad farmers; they either are not industrious, or if they are diligent, they want contrivance and economy, to employ their labor and exertions to the best advantage. They seem not to know how to combine "*art with strength*," to unite "*contrivance with industry*," to associate "*labor with convenience*," or to blend "*convenience with elegance*.' These you have yet to learn."

In this letter, Mr. Editor, written by a young American in Scotland, fifty-eight years ago, we have some remarks which are applicable at the present time.

Staten Island, April 24, 1845. RICHMOND.

NUMBER II.

In our former communication it was stated that Dr. Mitchell delivered two addresses before the old Agricultural Society. It is now intended to notice them more particularly. The first was delivered before the Society and members of the Legislature in the old City Hall of the city of New-York, then situated at the corner of Wall and Nassau streets, on the 10th January 1792, soon after the organization of the Society.

After some prefaratory remarks and reference to the Idills of Theocritus, the Georgics of Virgil, among the ancients, and the pastoral essays of Gessner and Haller in later times among the Germans, and of Pope and Phillips in England, he comes down from the lofty flights of these fanciful writers to matters of fact, to the "dull pursuits of civil life," and he first points out those things for which we should be thankful:

"For among the numberless favors which Divine bounty has bestowed upon this fortunate land, that which in the first place claims our grateful acknowledgments, is the abundant harvest which rewards the industry of the farmer: since to a healthful climate and a fruitful soil, there is annually added the genial influence of a season that beautifies spring with blossoms, and loads autumn with fruit." p. 17.

Then he points out the condition of the land of this country, when first subjected to the plow:

"Hitherto, the American husbandman has cultivated a soil, enriched for ages by the yearly addition of a fresh stratum of mould. From the first existence of vegetation upon the dry land, decayed plants have continually furnished a supply of manure, which the winds and rain have liberally spread abroad. As the supply was annually greater than the consumption, the earth, unexhausted by its productions, increased in fertility. The thick layer of vegetable mould which covered the face of the earth was a store-house of food for plants, and this quantity was greatly increased by the conversion of wood into ashes by clearing. It is not wonderful, then, that for some years newly-cleared settlements should abound in produce, and require little more labor than that of plowing and reaping. During this period the provision is wasting, which for centuries had been accumulating. But the time will come, and indeed in many places *now is*, when the land, repeatedly wounded by the plowshare, and exhausted of its richness, shall be too weak of itself, to make plants grow with their former luxuriance. This may be called the era of systematic agriculture, when man, taking the earth from nature's hand, bare of manure, is so to manage and dispose it artificially, that it shall yield him first a subsistence, and then an overplus to grow wealthy upon. How far art may go in this species of improvement is yet unknown, as the *ultimatum of fertility* has never yet been reached." p. 20.

Proceeding in the perusal of the address we find that Dr. Mitchill then (1792) a young man, understood the nature of exhausted lands and the means of renovating them as well as we do at this day, (1844.)

"But how (says he) are fields to be artificially fertilized? By manure. This is the great hinge upon which the whole system of agriculture turns. In procuring this needful substance, we are first to imitate nature in collecting all the vegetable matter we can find, suffering nothing to be lost. As however, if a field, yielding

grass for brutes, or grain for man, is principally exhausted of its produce by the creatures whom it supports, a very inconsiderable quantity remains for manure. What then is to be done? Must the land go on to be impoverished from year to year? No. The animal, the vegetable, and the mineral kingdom most be ransacked for something to aid the growth of plants. The ashes of wood and of peat, the muddy depositions of puddles and ponds, the unrespirable portion of our atmosphere, and some of the particles floating therein, the various earthy productions of marl, chalk, gypsum, clay and lime, and likewise the excrementitious matters of most animals, are found by experience when properly employed, to promote directly or indirectly the process of vegetation. When these things are added to the soil, they act in one of these ways. 1st. They are a pabulum plantarum, and materially contribute to the nutriment of plants; or, 2d, They are stimuli to plants, and by exciting them to action cause a greater absorption of food, a better assimilation of it, and consequently a more rapid and vigorous growth; or, 3dly, They so alter and dispose the earth in which plants are rooted, that the radicles shoot more easily and more extensively through it, or in other words it becomes a better filter for straining and applying nourishment to their inhaling and absorbing vessels." p. 23.

In this short extract, (Mr. Editor,) we have the principles contained in what are considered as discoveries and improvements of the present day. Very little notice and no application of them ever was made at the time they were promulgated. Well might your late deceased associate say of him and some of his co-laborers in agriculture, that in 1792 they were "evidently in advance of the age," as we shall hereafter be able to show in other particulars.

It was stated in our first number that manufactures were embraced in the plan of the "Old Agricultural Society." The address now under consideration speaks of these with due respect and discrimination:

"But I would not wish to be understood that the whole of our labor should be applied to agricultural pursuits, as if those were, as some argue, the only industry that is productive; for I think it may be clearly proved, that the capital and labor of this country, will be most advantageously employed, if a part of it is expended in manufactures; the best policy in this respect, being to carry on agriculture without neglecting manufactures, and at the same time so to manage manufactures, as that agriculture may be conducted with a due degree of spirit."

This first address before the old Agricultural Society treats of quicklime, plaster of Paris, and fish as manures, and recommends the preservation and even the cultivation of the sugar maple for the production of sugar: also the rearing of the yellow locust (Robinia pseudocacia) for its timber. Attention is called to the vine, the mulberry, the mangel-wurtzel, barley, hops, &c., as neglected articles of husbandry. Of animals, he recommended the introduction into the United States, the Bos bubalis or tamed Buffaloe of Europe, which Dr. Mitchell observes "has been long domesticated in Hungary and Transylvania." He also recommends mules and oxen in preference to horses for draught on a farm. He also spoke in the aforesaid address, of sheep, and the wheat insect, (Tipula tritici, more recently named Cecidomia destructor.) Of the latter he subsequently wrote an account which is in the transactions of the old Society. The address concludes by directing attention to injurious insects; for says the author, "We are almost entirely in the dark respecting the history of the insects injurious to our useful plants, and that man would be laudably and beneficially employed, who should collect what is knowable concerning the different moths, bugs, flies and worms, which infest our fields and gardens."

This labor, recommended nearly fifty years since, was neglected until it was undertaken by our late esteemed agricultural writer, Willis Gaylord, who commenced the work, (Trans. N. Y. State Ag. Soc. 1843, p. 127,) but was removed to his rest ere he completed the undertaking.

LYING.—The credit that is got by a lie, only lasts till the truth comes out.

SOILING CATTLE AND HORSES.

Soiling, or feeding animals during the summer season with green food, cut daily, and given to them in yards or stables, is nearly unknown in this country, and its advantages but little understood. This is owing chiefly to two causes. Land is comparatively cheap, and labor costly; and the saving of the former, and increase of the latter, by this practice, have prevented a fair trial of its merits.

If, however, experience shows that the nett profits of the farm are greatly increased, even though attended with greater temporary outlay, the practice ought to be more extensively adopted. The chief advantages of soiling are these:—The whole of the green food is consumed with less waste than by pasturing; it is not beaten under foot by cattle's hoofs while in a feeble state, but a full and luxuriant growth allowed before it is touched. The ground is not poached in wet weather; the cost of division fences is diminished; a great saving of manure is effected; and the advantages of rest and quietude secured to the animals. The chief objection is the amount of labor required in cutting the food, and in feeding and littering the animals. Hence it becomes a matter of importance to strike a balance, as nearly as the results of experiments will allow.

Loudon estimates the product of an acre, mown and fed green to cows, at triple the quantity obtained by pasturing; experiments reported by John Sinclair give the same results,—17 acres in one case, having supported 33 head of cattle more than four months, which had previously required 50 acres of pasture; and the same results were obtained by Josiah Quincy of Massachusetts. Other trials make the difference considerably less, but in such cases the pasture appears to have been suffered to acquire *a tall and heavy growth before the cattle were turned in, and thus the advantages of the practice just recommended were partially secured.*

Several limited experiments made by the writer, decidedly confirm the opinion that not far from three times the amount of product is obtained by soiling, over the common practice of feeding on short pasturage.

Many experiments have been performed in England, showing the increased rapidity with which cattle thrive when fed by soiling. In one case, two cows were fed four and a half months, one being soiled, and the other pastured. The former gained 16 stone, the latter 9 stone. In another experiment, 48 cattle were fed, one half by soiling, and one-half by pasture. The soiled cattle sold at six dollars more per head than the other; the food consumed by the former was grown upon $12\frac{3}{4}$ acres, one-seventh of which were ruta bagas, the rest chiefly clover. Thus half an acre supported one head for nearly five months.

It is obvious that if soiling were generally practiced on the farm, the necessity of division fences would be nearly obviated. This is the case on the farm of Josiah Quincy, and many farms in England. Sheep, and such other animals as need feeding on the ground, being confined by hurdle fences, which are removed from time to time as needed.

In order to place before the eye at one view, the merits and disadvantages of this practice, the following estimate is made, which it is believed is not very far from correct:

Profits.

In 100 acres used as pasture, by soiling, 66 are saved, as already shown; the annual interest on which would be about $3 an acre,	$200	
Saving of about $1\frac{1}{2}$ miles division fence, at 40 cents a rod in ten years, or 4 cents yearly, a moderate estimate,.....	20	
Saving of at least 100 loads manure, if litter is freely used, as it ought to be,.....	25	
		$245

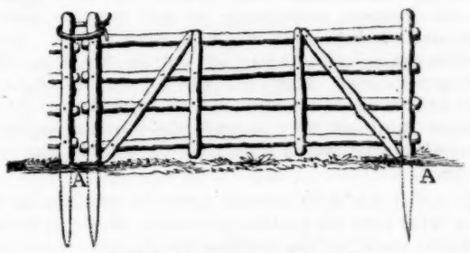
Cost.

Expenses of cutting 33 acres of grass, drawing and feeding, but not curing; littering and cleaning yards or stables, say.....	$100
Annual profit on 100 acres,.....	$145

The preceding calculation is for the average price and

quality of land in the State. In the vicinity of cities, where the interest per acre would be from 7 to 14 dollars an acre or more, and where maaure might cost 50 cents per load, the profits of soiling over pasturing, would of course be more than double. While on the rich and cheap lands of the western country, it would be a decided loss. It is obvious that to be successful, an abundance of straw litter will be needed; and in proportion as this is abundantly supplied, will be the amount of manure returned.

The preceding hints are given with the hope that careful and well directed experiments may be undertaken. Thorough trial only can establish the advantages of the practice. Many throw aside a new thing at once, if full success does not attend the first effort. But a first effort in any of our common farm operations would be far less likely to succeed, than after years of experience. Experiments may be made upon a *small scale*, with little danger of loss.



Moveable Fence—Fig. 79.

HURDLES, or moveable fences for confining animals to particular portions of ground, are necessary in many cases, where soiling is extensively practiced; and the operation of thus confining them, possesses in part, the advantages derived from soiling, no portion of the field being touched but that on which they are feeding, which is not left till all the herbage is consumed. The manure, being also thus limited to one spot, may be plowed under before much loss is occasioned by evaporation.

A mode of erecting this kind of fence, lately witnessed by the writer, at the residence of Charles Downing of Newburgh, is at once so neat, cheap and useful, that a figure and description may be of value to others. The fence consists of separate frames or "lengths," one of which is shown by fig. 79, with a sharpened post at each end, A. A., driven into holes made in the ground by a crow-bar, and secured at the top by withing together, though the latter is not indispensible. These pieces are made of round poles or sticks split in two, the flat sides being placed next to the cross bars, which are fastened to them by wrought nails at the points of intersection. The points of the posts are driven into the ground to a depth of about fourteen to sixteen inches.

These frames or lengths of fence, are four feet high and eight feet long—they cost, besides the material, two dollars and twenty-five cents per dozen in making, or thirty-seven cents a rod. The material would add about thirteen cents more, making half a dollar a rod, for the whole.

Two men put up thirty rods of the fence, securing the tops by withes, in about three hours. J. J. THOMAS.

INSECTS INJURIOUS TO AGRICULTURE.

MESSRS. EDITORS—Permit me to call your attention, and also that of every American Farmer, to a work published in Massachusetts entitled "*A Treatise on some of the insects of New-England, which are injurious to vegetation;* by T. W. HARRIS, M. D." Cambridge, Mass. 1842. I obtained an early copy of this work, and have now had the advantage of two seasons for comparing the details of the book with such insects as have come within my reach: and I am authorized by this experience to say, that it has more than answered my expectations, almost equalled my most sanguine hopes. So far, even *here in Maryland*, I have found no insect that could be embraced in the object of the work or explained in the title, that was not fully described in that Treatise. When you recollect that the work only pretends to describe insects that prevail in *New-England*, you will admit that this is saying much for the work. It is a strange circumstance, but it appears to be a fact, that all insects of the class under notice, seem to proceed *from* the north-east *to* the west and south. Such was the point of departure, and such the *course* of the Hessian Fly, the Curculio, and I believe every other insect "injurious to vegetation." We have not yet among us the Canker Worm, of which our north-eastern friends so much complain; nor the rose slug, nor some other depredators upon our luxuries and comforts. How long will it be before they shall arrive here? I am induced to offer you this brief paper in consequence of the discovery of the *Spindle worm*, in our corn, (called by Harris, the *Gortyna Zea*, of the family of Nonagrians,) now, so far as I know, for the first time seen here. Harris's Treatise told me all about it, and I have published in our local papers, such a description and method of prevention, as I hope will arrest the evil.

Baltimore, Md. 1844. GIDEON B. SMITH.

INTRODUCTION OF SPANISH SHEEP.

"Honor to whom honor is due."

The man who "makes two blades of grass grow where only one grew before," is, proverbially, a public benefactor—seeing that his example may benefit others, and stimulate millions to improve their mode of cultivating the soil.

One of the contributors to the last volume of Transactions of the New-York State Agricultural Society, concludes his article by invoking some of his wealthy countrymen to emulate the example of the late Patroon, by adding to our country some animal or crop that may promote the welfare of the farming community. "Is any thing more needed to accomplish this object," says the writer in urging the introduction of the Scottish Highland cattle—"is any thing more needed to accomplish this object, than to stir up the spirit of patriotism which exists among the wealthy land-holders of the Empire State, by pointing to the noble example of the venerated Van Rensselaer? ☞ Let those who would secure perpetual honor to their names, by conferring favors on their country, emulate his worthy deeds."

The spirit which influenced that writer, animates me in now directing public attention to another BENEFACTOR of AMERICAN AGRICULTURE. I allude to DAVID HUMPHREYS, a friend and companion of Washington—the man who, by "introducing the Merino breed of sheep from Spain into this country," rendered to this Republic, services not less valuable than his efforts in the battle-field. Is not such a man worthy of enduring remembrance? and yet how few are there who now remember the name of HUMPHREYS in connexton with the benefits showered upon American Agriculture by the introduction of Spanish sheep?

Examining the records of the "Massachusetts Society for Promoting Agriculture," I found a memento which should be published broadly now when public attention is aroused, as it was never before aroused, in reference to *Sheep Husbandry*. The grateful testimonial uttered to the merits of Col. Humphreys by the Massachusetts Society more than forty years ago, is now before me: And where is the man among us who will grudge the corner of a newspaper necessary for publishing the interesting fact, that on the 29th of October, in the year 1802, that ancient Society, which yet "flourishes like a green bay tree," UNANIMOUSLY VOTED—

"That a gold medal be presented to the Hon. David Humphreys for introducing the Merino breed of sheep from Spain into this country; and that the Rev. Dr. Parker be a committee to procure said medal, and to cause such inscriptions to be engraven as he shall judge suitable, and to transmit the same agreeably to said vote."

Thus endeth the first chapter. In the next, I may mention a few more facts on this subject, in connexion with the statements made by Col. Humphreys concerning the *Merinos*, when he introduced that breed into the western world. RHO.

AGRICULTURE is the most ancient, the most honorable and the most useful of arts.

SAXONY SHEEP OF THE LATE HENRY D. GROVE.

MESSRS. EDITORS—During an excursion to the east, in the month of May last, for the purposes of business and pleasure, I visited the residence of the late Mr. Grove of Hoosic, Rensselaer co. Although several eulogies have appeared on his character, all fall short of those which the stranger will hear pronounced from those who knew him well and intimately—his immediate neighbors. The saying "that the prophet is more honored abroad," was in his case reversed; it is in the vicinity where he lived, that his excellence as a father and husband—his kind and humane qualities as a neighbor—his benevolence, his rigid probity in all his business transactions, are best known and appreciated. His enduring monument is in the hearts of those who knew him personally and intimately; and those who knew him thus, were his attached and ardent friends.

My object was to inspect the justly celebrated flock of sheep which had been the object of so much of his care, and which so widely extended his fame as a wool grower. The farming public, through the medium of agricultural papers, has been informed of its origin—that it was made up of selections from the most distinguished flocks in Germany by Mr. Grove himself, and at a cost, too, which would seem almost incredible to many, but not to those who are acquainted with the fact that very many sheep of similar excellence are every day selling in Saxony at prices varying from one hundred to 500 dollars per head. This will be found corroborated in the recent communication of Samuel Lawrence, Esq. of Lowell, in the Cultivator, where he alludes to a flock purchased and taken to Russia, a short time since. I refer to this more particularly to show that the wool growers in Germany know how to appreciate *purity of blood;* and the American sheep breeder will fail to attain perfection in his fleeces unless this point is more rigidly attended to than it has been. It is unnecessary to mention more than a single fact to impress the importance of this. It is stated by Lasteyrie, and confirmed by Chancellor Livingston and others, that the pure Spanish Merino fleece will not divide into more than four sorts—the fourth consisting entirely of leg wool; whereas, the grade Saxon and Merino divides into not less than from seven to nine qualities. Thus the remarkable uniformity of unalloyed sheep constitutes their chief value; and hence the reason why the manufacturer so highly prizes "good blood"—and explains the fact of the Messrs. Lawrence paying for such wool more than some others, as is very well known. This important point of evenness is characteristic of every individual I examined, to a degree truly surprising. In many instances it would require a critical eye to perceive any difference between samples taken from the shoulders and flanks. In addition to this, Mr. Grove increased the weight of his fleeces, by judicious selections from male and female for breeding, within a few years, very much; his clips averaging nearly 3 lbs. I am not aware precisely of the average of his buck fleeces, but a buck lamb I engaged of him shortly previous to his decease, sheared the present season 5 lb. 10 oz.

Another very important recommendation is the remarkable compactness of the fleeces, as well as length of staple; the latter quality, through the improvement in machinery, now being highly esteemed by manufacturers, inasmuch as they obtain more sound wool, and less "dead end" than from short staple.

This flock has always been free from foot-rot and other epidemics, and at the time of my visit was in capital condition.

To me it is melancholy to know that this magnificent flock of Saxons is to be sold. Stern necessity demands it or it would not be done. Its original heavy cost to Mr. Grove kept him somewhat embarrassed, and unfortunately thus he died, leaving a wife and four young children, whose fate, whether of competence or a plain support, or in circumstances much below it, will depend on the prices obtained on the day of sale. Let the friends of the lamented Grove look to it; let not the invaluable stock of one of our most enlightened and enterprizing agriculturists, be sacrificed. Yours, &c., L. A. MORRELL.

Lake Ridge, July 17, 1844.

HAYMAKING.

MESSRS. EDITORS—The article of hay alone may be set down as one of great consequence to the farmer, being one of his principal products, and the most essential fodder for most kinds of live stock. My mode of managing the hay crop, with some other suggestions, I cheerfully present for your consideration.

Many different notions prevail among us respecting the time and manner of cutting and securing the hay crop. It would appear that some true system should be established with this as well as with the grain crop, which has been reduced to one regular system.

That mode which will preserve as much of the natural juices of the grass as possible, and in the cheapest practical manner, is the one I have endeavored to attain. Counting nothing for board and team, we do not pay out one dollar per acre for cutting and securing our hay, at an average of one and a half tons per acre. In this section of country, a majority of our mowing lands, are composed of clay, and quite free from stones. We lose ten times more of our hay by cutting too late, than by cutting too early. Many let their clover and herds-grass stand till the seeds are ripe, and of consequence the stems become hard and wiry; a good share of the leaves have changed to a brownish state, and the natural sap has left the plant.

To get at the most proper time for cutting, let us inquire what rule the gatherer of herbs adopts in filling his medicine chest, or the distiller his plants. In collecting herbs and plants, they cut them as soon as they come into flower. At this period they contain all their useful qualities, and by cutting at this period, they secure the greatest quantity of oil; but herbs that are cut at this period and dried in the sun, lose much more of their invigorating and essential qualities than they do if dried in the shade. Plants of all sorts, if they are cut in full vigor, and afterwards carefully dried, without any waste of their natural juices, either by bleaching with rain or evaporating in the sun, contain a quantity of nourishing matter nearly double what they do when allowed to attain their full growth and make some progress towards decay. When mowing is delayed, as it very frequently is, till an advanced period of the season, when plants have not only reached their ultimate growth, but begin to decay, this description of herbage must become tasteless, dry, tough and less nourishing. Also over care in drying in the hot sun, by bleaching the juices of the early grasses, must produce a similar kind of fodder.

To commence with the cutting and manner of curing, we will suppose the grass to be a good burden, and in full prime for the scythe, but not ripe. The workmen should be made to cut as low as possible, especially if there abounds a fine bottom, thereby increasing the crop, and all the grass mown in the forenoon should be spread before dinner. As soon as the external wet is off, and it becomes partially wilted, we put it into winrows with a revolving horse rake, and before the sun goes down, into cocks of from 60 to 90 pounds; what grass is cut in the later part of the day, remains in the swarth till next day.

Grass should be made into cocks of about four feet high, not by rolling, but by laying one fork full upon another, and of as small diameter at the base as possible and stand firm; draw the loose hay out from the bottom all round and lay it upon the top with the ends hanging downwards. When grass is put together in this manner, it is in a great measure out of danger.

It will be proper to give them an airing before they are removed to the barn, and more especially that portion which comes in contact with the ground. When necessary, the first drying wind and fair day, lay them over by putting the top of the cock on the ground, and so manage after by putting as dry a bundle with the green, till you have one cock made up again, out of two being put together. By this treatment there is a more speedy exhalation of moisture by the action of the air, while an incipient fermentation will evolve or discharge a portion of heat, and thus promote the drying of the hay by increasing the evaporation of the humid particles. By this treatment the hay is secured until the maker wishes to remove it to the barn.

Clover hay should remain longer in the cock than most other grasses, that all the larger stems may undergo their proper fermentation. Before removing to the stack-yard or barn, we generally turn the cocks bottom side up an hour or two before loading.

Hay cured in this manner is much heavier, because not so much of the natural juices are evaporated by the direct heat of the sun. Its undergoing a partial fermentation in the cock, prepares it to be placed in larger bodies. Hay cured in this manner, should not be tumbled by the quantity into a mow all together, but one or two loads a day put together, and a mow of twenty tons should occupy the period of three weeks in filling, that it may all be got in as green as possible. The mow should be trod as lightly as possible at the time of filling.

When fears are entertained of over fermentation, a layer of dry straw or stalks over the whole, is an excellent thing. This coarse fodder, absorbing the extra juices of the hay, retains it, and makes it more tender and palatable. We prefer this method to the common one of salting for the above reason—and that we may select our days for feeding the stock their salt in winter, by brining the hay on the more mild and warmest days, when they have the least appetite. In this manner, we have a ready market for our poorest hay. Cattle and sheep devour it with a good appetite. If farmers would pay more regard to this manner of salting their stock, say to one hundred pounds of hay use a pint and a half of fine salt and one pail of water, they would be well remunerated for their extra labor. Sheep and other stock will look as full on these faintest days of winter, by thus salting their food, as they will in the most favorable weather on good hay.

When grass is quite ripe it should be exposed to the sun as little as possible after it is mown, and be made into large cocks or removed immediately to the barn, that by a steaming process, the dry stalks may become more valuable. Hay should in no wise be put into the barn or stack when wet; there is more hay damaged in this manner than by securing it too green. That hay which comes out of the mow the most solid will spend the best. There is more value in a load of hay taken from land that produces about one and a half tons to the acre, than there is in that hay which is cut from lands that produce much heavier or lighter burden.

In stacking hay, first put in the rack about two tons, and let it rest two or three days before more is added. The stackman should be careful about treading near the outer side but as much as he will in the middle, and mind and keep the centre the highest. Four or five tons make the most convenient stack. We have different ways of stacking recommended to prevent vermin. But let the stack be put up as above directed in its proper time, before the seed is matured, and there is no danger of mice; but when it so happens that grass must be put into stacks in a ripe state, salting will aid in preventing the depredations of vermin, but such hay should be fed out the first winter.

It is safer to purchase a large stack by guess than a small one.

The manure may all be removed from the stack yard; the urine is sufficient that remains in the land.

Tight barns are preferable to more open ones, with ventilation at the top; the heat will not drive to the centre of the mow but remains more equally over the whole than it will in an open bay.

A very common but bad practice is to put an assorted lot of hay over a cow, calf or horse stable, for spring use, where it has received all the effluvia arising from the manure below all winter, which cannot add to the quality of the hay, for at a time when the team is the most dainty, the best hay for spring work comes out of a well pressed mow, as little exposed to the air as possible. By dividing the mow and hay stack with a hay knife, not only keeps the hay as fresh as possible, by first feeding out one half, but we can better judge at what time of winter our fodder is half spent.

When a field is designed for clover seed, it is better to eat it down till the first of June with sheep. The after math will be shorter if the heads stand close together, the crop less bulky, but better filled.

If a crop of June grass be light, it many times is better to stand late. The ergot or poison with which it frequently abounds, will all be washed off by rains, and the rowen that springs up will frequently produce a good burden of excellent hay.

As we cannot cut all our grass in proper season, we reverse our mowing by cutting *first* this season the field which was *last* to receive the scythe last year.

Drag-rakes are very fashionable in these parts, for raking light grass, and after the cart, &c. They are of very great advantage in facilitating the work. They are made with a light head six feet long; the teeth set in the head 4 inches apart, and 14 inches long; the handle enters the head in two parts about two and a half feet asunder, and united together about four feet from the head where a convenient place is fixed for the head to draw by. The small hand rake is pretty much laid aside. What would have required the labor of a boy and four or five men ten years ago to rake over, now is disposed of equally as well, by one boy eight, and another fourteen years old, a horse and revolving rake, and drag rake.

Weybridge, Vt., June, 1844. S. W. Jewett.

SOUR SOILS.

Messrs Editors—I could not but expect that my paper on this subject would call out some notice, but I certainly did not look to such a source as Mr. J. J. Thomas. From what I have seen of his writings, I have learned to think him too much of a scientific man to hold to old notions when there is not ground to support them; and I think his own mind, if it considers the true facts in this subject, will lead him to think as I do. This is not flattery, but a candid estimate of the man.

The statement with regard to the lead pipe, in the July No. of the Cultivator, is an interesting one, and worthy of consideration, though not in reference to sour soils, inasmuch as the soil cannot be considered as extending to the depth of 2 or 3 feet. I will not attempt to give an explanation of it, since it would require a chemical examination of the earth from the spot to determine positively what it was that corroded the pipe. The cause was evidently local, and the growth of sorrel, I should consider, entirely accidental. If Mr. Thomas will send a portion of this earth to Dr. Emmons, I will see that it is examined in reference to this fact.

When I spoke of the effect of lime upon the growth of sorrel, I had in my mind a very interesting letter of Judge Darling of New-Haven, in which are found some remarkable facts on this subject. It was published in the Farmer's Gazette for Feb. 1843, and I presume Mr. Thomas has seen it. That this weed disappeared from the land of Mr. Dell after the use of lime, as stated by Mr. T. I do not doubt. But did he apply nothing else? Did he not apply a course of tillage in connection with the lime, which would be quite as likely to remove it? In judging of results from any process in Agriculture, all the attending circumstances ought to be carefully estimated.

Mr. T. says that the yellow pine will perish if not planted in what is regarded as a sour soil, and yet sorrel, the presence of which is always supposed to be an indication of a sour soil, will grow where the pine will perish. These facts would seem to contradict each other. I do not see the force of Mr. T.'s conclusion to this paragraph.

I do not know what "are regarded" as sour soils. I do not know what a sour soil is. I have never heard of the presence of any free acid being detected in any soil, nor in the water which passes through it. It certainly would be detected if it were there, or else great mistakes are made in analysis. It cannot be reasoned thus, because such a plant grows upon a soil, that soil is sour. The only evidence of its being sour, is the actual finding an acid in it, and if one is there, it can certainly be found. There may be "great difficulty in determining the constituents of the soil," but this can only be in case the quantity is very minute of any one substance, which I apprehend cannot be the case with the acid in a "sour soil."

Newburgh, July 15, 1844. A. J. P.

CULTIVATION OF FRUIT.—No. VIII.

THE PEACH AND NECTARINE.

The peach is usually cultivated by planting the stone in autumn, at a depth of about two inches; a small part of them grow the succeeding spring, and the remainder the year following. Cracking the stones before planting insures their growth the first season; but it is best in this case to expose them to the action of frost, during winter, mixed with sand or earth, and to defer the planting till spring. Probably their vegetation, in ordinary cases, would be accelerated if they were mixed with earth in a box, and during winter, successively subjected to the alternate action of freezing and thawing, by which the stones would be opened. If the soil be fertile, so that their growth is vigorous, they may be budded the same season; but if not, the operation must be deferred till the second. One and two years growth of the bud will render them large enough to transplant into the orchard.

The most suitable soil for the peach is a rich sandy loam; a light soil is generally preferred, but this is not indispensible, provided the ground be properly prepared. We have known this tree to succeed admirably on heavy soils, when very large holes were dug (6 or 8 feet diameter,) and filled with loose fertile soil. Peach trees, when transplanted, should not be large; a small thrifty tree, well set out, will in consequence of its rapid growth, produce sooner a large tree, than a larger tree, whose size has prevented the work being so well performed. For further directions, see a former number of this series on transplanting and general culture.

It is very commonly supposed that varieties of the peach may be continued without change, merely by planting the seed; hence many neglect their propagation by budding. The least improved varieties doubtless vary least; the common Indian peach, for instance, appears to continue nearly the same through many successive ages, though many sub-varieties of this exist. But the finest varieties, being farthest removed from the wild or natural state, are most liable to variation, and the original is consequently very rarely produced from seed. The nice shades of difference, however, which distinguish different varieties, are frequently entirely overlooked, and the error that the same sort is obtained from seed is thus confirmed.

To obtain good varieties with any degree of certainty, budding must be resorted to. Grafting rarely succeeds, and never unless performed with unusual care on such kinds as have the firmest wood. For particular directions on budding the peach, the reader is referred to the second number of this series of articles, published last winter.

When the great difference between good and bad varieties is remembered, the importance of obtaining the *best*, must be obvious. The reputation of some which are truly excellent, has been greatly injured by the numerous errors in names which have been introduced. Not only are the names of fine varieties attached by mistake to worthless fruit, but good varieties are increased merely by planting the stones, and the original name given to them, which is still continued through successive plantings, though wide departures from the original are thus generally produced.

This confusion and misapplication of names, and consequent perplexity to the cultivator, have induced the attempt to arrange the varieties and distinctive characters, so that this inconvenience may be removed. The peach presents facilities for this purpose, not existing in other fruits. The following, which is generally adopted as the best, is from Lindley. Peaches and nectarines, (which may be considered as one and the same fruit, the latter having smooth skins,) are separated into 3 general *classes*, each of which has three *divisions;* these are each separated into two *sub-divisions*, and every sub-division into two *sections;* consisting in all of 36 sections. Only a part of these sections contain varieties with which we are acquainted, and are only to be filled up as new ones are discovered with characters adapted to them.

Class I, comprehends those whose leaves are deeply and doubly serrated (or cut like sawteeth,) and having no glands on the serratures. Fig. 80.

Class II, contains those whose leaves are crenate or serrulate (or with smaller and more rounded teeth,) and having globose glands. Fig. 81.

Fig. 81.

Fig. 81.

Fig. 82.

Class III, includes all those whose leaves are crenate or serrulate, having reniform (or kidney-shaped) glands. Fig. 82.

"The form of the glands," as Lindley very justly observes, "as well as their position, is perfectly distinct; they are fully developed in the month of May, and they continue to the last, permanent in their character, and are not affected by cultivation. The globose glands are situated, one, two, or more on the footstalks, and one, two, or more on the *tips* or *points* of the serratures of the leaves. The reniform glands grow also on the footstalks of the leaves, but those on the leaves are placed *within the serratures*, connecting, as it were, the upper and lower teeth of the serratures together; their leaves, when taken from a branch of a vigorous growth, have more glands than the leaves of the globose varieties. It will, however, sometimes happen that glands are not discernible on some of the leaves, especially on those produced on weak branches; in this case, other branches must be sought, for which to produce them." They are represented as rather larger and more distinct in the accompanying figures, than usually occur in a state of nature.

These classes, thus formed, are each divided into three divisions.

Div. I, embraces those which produce large flowers.

Div. II, includes those which produce flowers of medium size.

Div. III, contains those which produce small flowers.

These divisions are not so distinctly marked as the classes; the middle and small flowers only differing by the former being larger in all their parts.

The sub-divisions, two in number, are determined by the fruit. The first comprehends true *peaches*, or those which have a downy skin; the second includes *nectarines*, or those which have a smooth skin, similar to that of the plum.

Each of these sub-divisions are again divided into two sections; the former including the *pavies* or clingstones; the latter the *melters* or freestones.* For note see p. 255.

The following synoptical table will exhibit these divisions and sub-divisions as applied to the first class.

CLASS I. Leaves deeply and doubly serrated, without glands.	*Div.* 1. Large flowers.	*Sub.* 1. Peaches.	*Sec.* 1. Pavies.
			Sec. 2. Melters.
		Sub. 2. Nectarines.	*Sec.* 1. Pavies.
			Sec. 2. Melters.
	Div. 2, Middle flowers.	*Sub.* 1. Peaches.	*Sec.* 1. Pavies.
			Sec. 2. Melters.
		Sub. 2. Nectarines.	*Sec.* 1. Pavies.
			Sec. 2. Melters.
	Div. 3. Small flowers.	*Sub.* 1. Peaches.	*Sec.* 1. Pavies.
			Sec. 2. Melters.
		Sub. 2. Nectarines.	*Sec.* 1. Pavies.
			Sec. 2. Melters.

The same arrangement may be adopted with the other classes.

The following list contains some of the best varieties arranged according to the preceding method.

SERRATED GLANDLESS LEAVES. LARGE FLOWER.

Peaches—Pavies.

Old Newington.
Early Newington, or Smith's Newington.

Peaches—Melters.

Early Anne. Tillotson.
Malta.
Noblesse.
Early White Nutmeg.

Nectarines—Pavies.

Scarlet Newington.
Tawny Newington.

SERRATED GLANDLESS LEAVES. SMALL FLOWER.

Peaches—Melters.

Royal George.
Belle de Vitry.

CRENATED LEAVES, WITH GLOBOSE GLANDS. LARGE FLOWER.

Peaches—Melters.

Grosse Mignonne.

CRENATED LEAVES, WITH GLOBOSE GLANDS. SMALL FLOWER.

Peaches—Melters.

Bellegard.
Teton de Venus.
George the Fourth.
President.

CRENATED LEAVES, WITH RENIFORM GLANDS. LARGE FLOWER.

Nectarines—Melters.

Fairchild's.

CRENATED LEAVES, WITH RENIFORM GLANDS. SMALL FLOWER.

Peaches—Pavies.

Incomparable.
Catharine.

Peaches—Melters.

Chancellor.
Late Purple.

Nectarines—Melters.

Common Elruge.
Violet Hative.
Aromatic.

The following list of peaches will give a constant succession from a period immediately after wheat harvest, until autumnal frosts.

Melters.
- Early White Nutmeg.
- Early Anne.
- Early Tillotson.
- Early Red Rareripe.
- Early York.
- Grosse Mignonne.
- White Imperial.
- Red cheek Malacaton.
- Malta.
- Columbia.
- President.

Pavies.
- Early Newington.
- Oldmixon.
- Old Newington.
- Lemon Clingstone, Pine apple, or Kennedy's.
- Heath.

The Early White Nutmeg is a peach of very small size, and a very poor bearer; and a cultivator may count him successful, if he gets a quart of peaches from a full grown tree. It ripens a week or more after our wheat harvests, and is valuable only for its early maturity. The Early Anne is later, but much larger and a much better bearer; and were it not for its very slow growth, would be truly valuable. A larger variety, a few days later, obtained from the seed of the Early Ann, is known by the name of Sweetwater. But the latter is scarcely a day or two earlier than the Early Tillotson, a peach fully equal to it in size and superior in flavor, and far exceeding it in productiveness, and which is in every respect a truly valuable variety, ripening in western New-York in the early part or middle of 8th month (Aug.) All the preceding are cut-leaved, glandless varieties, and are consequently subject to mildew, though the Tillotson is but slightly so, and soon nearly outgrows it.

The peach appears to vary more in quality from the effect of climate than other fruits. Fine American varieties are pronounced worthless in England. And varieties in this country, unusually delicious in favorable seasons, are of inferior quality in unfavorable ones. Again, culture greatly effects the quality; thus, the Heath clingstone, under favorable circumstances, is an excellent fruit, but if the branches are permitted to bear full, the fruit is small and of little value.

Some varieties which are excellent as far south as the vicinity of Philadelphia, when removed fo western New York, prove to be greatly inferior in quality, in consequence of the slightly diminished warmth of summer. Hence only the earlier kinds cultivated there are suitable for culture here. The business of originating new and early varieties for the most northern region adapted to the peach, deserves more attention, and might be productive of some very valuable discoveries.

Peach and Nectarine trees are liable to destruction from two causes, the *worm*, and the *yellows*. The presence of the worm is readily detected by the gum mixed with excrementitious matter oozing from the trunk, at the surface of the ground. The best, and probably the only effectual remedy, is to scrape the earth from about the tree, and then with a knife to follow the holes made by the worm to their termination and destroy it. As this insect merely confines itself to the *bark*, its destruction is very easy. It rarely occurs that trees are completely destroyed by this insect, except they be small; death can only take place when the bark is eaten round the tree. Timely care will prevent this; the evil in fact is only to be dreaded by negligent cultivators.

The disease termed the *Yellaws*, is truly formidable, and appears to be exclusively confined to the peach and nectarine. Its cause has never been satisfactorily ascertained. The first indication is an irregular and *premature* ripening of the fruit, accompanied with *purple discolorations* of the flesh. This usually occurs the first season on a part of the tree only. The following season, numerous small wiry shoots grow from the larger branches, the leaves become yellow, the whole tree assumes a sickly appearance, and eventually perishes. This disease is still more to be dreaded from its contagious nature. If not checked, it commonly spreads through the whole orchard. It appears to be usually communicated at the time of blossoming by means of the pollen. But the infection may be conveyed in other ways. The bud from a diseased tree inserted in a healthy stock will cause its death, and even the use of a knife in pruning which has been previously used on a diseased tree, is sufficient to communicate the disease. Facts also greatly strengthen the suspicion that the roots of healthy trees have imbibed the contagion by mere contact with those of diseased ones. After it has once attacked a tree there is no remedy; and to prevent it extending to others, the diseased tree should be immediately destroyed. No young trees should be planted on the same spot, as the diseased roots still remain in the soil. Coxe says, "The peach tree cannot be cultivated with success on the site of a former plantation, until some years of an intermediate course of cultivation have intervened." As it is probable that the pit or kernel becomes infected, caution would direct that stones from diseased trees be never used for planting.

The shortness of life in the peach tree and the consequent difficulty of its culture in some places, appear to be chiefly owing to this disease. In western New-York, it is comparatively unknown, and great care should be used by cultivators that it be not introduced by importations.

The peach tree, though generally supposed to be very short lived, when not destroyed by unnatural causes, will continue to flourish and bear for many years. Trees

*The terms *pavies* and *melters* are decidedly better than those of *clingstones* and *freestones*, as the softest and most melting varieties adhere in all different degrees to the stone. Hence the term *clingstone*, in its widest sense, may apply to both pavies and melters.

twenty years old and upwards, are frequently seen in western New-York; and in the town of Farmington, Ontario county, are the remains of an Indian orchard, containing peach trees a foot in diameter and probably fifty years old, in a bearing state.

The curled leaf, which frequently appears on peach trees early in summer, is occasioned by frost or chilly weather. These leaves soon drop and the tree assumes a healthy appearance. This would not be worth noticing, except that it sometimes occasions unnecessary alarm.

The growth of some varieties is retarded by mildew upon the young shoots. It appears to be exclusively confined to those having serrated glandless leaves, as the Early White Nutmeg, Early Ann, and some of the earlier varieties of the red rareripe. It is not a very serious evil; and the best remedy appears to be good soil and good culture to stimulate the growth. All yellow-fleshed varieties appear to be entirely free from it.

The length of this article precludes any further remarks on the curculio, which attacks the nectarine and sometimes the peach, than merely to say, that the evil may be prevented by jarring the insects from the tree on cloths spread beneath, and then destroying them; or by confining swine in the orchard, every year, during the early part of the season. The former should be done when the fruit is as large as a pea, and continued daily or oftener until no more are found. The latter should be continued so long as the injured fruit continues to drop from the tree. In the next number, a fuller account of this insect will be given. J. J. T.

CEMENT CISTERNS—THE BEST METHOD OF CONSTRUCTING.

Messrs. Editors—You will doubtless allow me to communicate through your valuable monthly, pro bono publico, but especially for the benefit of those interested, a few brief hints in regard to the proper manner of constructing cisterns; household appendages so necessary to the comfort and convenience of those who are not blessed by nature or art with a generous fountain of pure soft water at their doors.

Of the various methods recommended and practiced in different sections of the country, the plan of constructing cisterns of brick and water cement, is doubtless far superior to any other, particularly in regard to usefulness and durability. Though we have made one answer a tolerably good purpose for a number of years, made of white pine, bound with strong iron hoops, and firmly set in blue clay, yet the liability of the material to decompose and become useless, even when every precaution is used, suggested the propriety of adopting some improved mode in constructing it. The plan chosen was the one above mentioned. We constructed two of different sizes. For the largest, a pit was ordered to be dug ten feet in diamter and nine feet in depth, the bottom being shaped similar to that of a large potash kettle, and the sides perpendicular. The brick selected from the kiln for the purpose, were those burned hard, though but little cracked or warped. The mortar used was made of two parts coarse clean river sand, and one part ground water cement ready for mixing, obtained at the mill near Schuylerville, N. Y., at 25 cents per bushel, though from the fact that it does not petrify or "set" as soon as some kinds, it is believed a superior quality may be obtained. Water is worked in to render it sufficiently soft for use, like common lime mortar. With materials and pit thus prepared, the mason commences operations exactly in the centre and bottom of the excavation, by covering the surface with a thick coat of his mortar, and laying the bricks with their flat surfaces contiguous, forming as soon as convenient, a perfect circle of some three or four feet in diameter. Regular courses are then laid around the circle, taking care to increase the inclination of the upper edge towards the centre, so that when the bottom is finished to the edge from where he wishes to carry up the sides, the bricks will be placed in an angle of about fifty degrees with the perpendicular side. Extreme care should be taken with this part of the work, and an extra quantity of cement used, in order to prevent the possibility of a leak, as in turning up the wall, the outer edges of the bricks must necessarily be further apart than the inner, and every cavity should be completely filled with the mortar. The sides were then carried up perpendicularly five feet, from which point they were gradually drawn in until carried up nine feet, and the neck or top so small as to admit of being covered with large slabs of white marble, with a circular orifice sufficiently large to admit an ordinary sized person, and to place a pump for raising the water. A curb is then carried up sufficiently high to prevent any action of the frost on the work below, and filled in with dirt or gravel that will not heave. At the top of the brick wall and immediately under the stone covering, is left an opening the size of a brick, from which a drain is laid to conduct off the surplus water, made like the cistern of brick and cement. While the wall is going up, the mason should be particularly careful to lay on a good coating of cement over the outside before filling in, care being taken to preserve a sufficient space between the bank and wall for this purpose. To complete the work, a flat stone is placed on the bottom of the cistern in a bed of mortar for the pump to stand upon, the whole inside plastered with cement similar to the walls of a house, and after drying a few hours, whitewashed with a thick mixture of cement and water, and the work is done. Water may be admitted after the work has become partially hardened, but should be conducted to the bottom in such a manner as not to wash the coating of cement. The first quantity of water discharged into it, will be hardened and rendered unfit for use, by the sulphate of lime contained in the cement, which may be pumped out, when the next will be soft.

The advantages of having cisterns constructed as above described, must be apparent to the most casual observer. When done in a workmanlike manner, and with proper materials, they will be as durable as though formed of solid rock, and the inside presents a surface as free from filth as any stone vessel used for culinary or household purposes. Different families will of course require different sizes, and the amount of material necessary to construct them, vary accordingly; the one described, containing something like 45 hogsheads, the other about 20. The builder, Mr. Richard Swartwout of Schuylerville, N. Y., has often, to save expense, been ordered to plaster the cement directly on to the earth as shaped with the shovel, and covering with plank or large stone as before. But the mode is evidently objectionable, as, if accidentally exposed to the frost, the sides will crack and become leaky. Brick cisterns laid up with common mortar, are also liable to crumble in time, and prove defective. In either case, however, the top should be sunk below the surface, and covered with gravel sufficiently deep to prevent the action of the frost on any part of the masonry. If any of your readers choose to construct their cisterns according to the above directions, taking care to secure an experienced workman and good materials, they will find doubtless, should they live so long, that the lapse of half a century will not affect their usefulness or impair their durability. J. Chace.

Hoosick Falls, June, 1844.

CORN-STALKS FOR SOILING.

Some remarks were made in another column, on the advantages of soiling. One mode of raising green fodder for this purpose, should have been mentioned. This is by sowing corn. A sufficient number of experiments have been made to establish fully its advantages. Those made last year by the writer, by sowing it in drills two feet apart, and about twenty to thirty grains per foot in the drill, yielded over fourteen tons of green food per acre, though the land was not rich, and would not probably have given more than thirty bushels of the grain in the usual way. Dr. Button of Newark, N. Y., raised by sowing broadcast, (four bushels of seed per acre,) five and a half tons of dried fodder; and J. A. Miller of the same place, raised last year, which was a very dry and unfavorable season, and on poor and unmanured land, four tons of dried fodder to the acre.

The small size of the stalks, caused by the dense growth greatly improves the quality, horses and cattle consumi

entirely both leaves and stalks. A very striking benefit is derived from the use of the green stalks, during the latter part of summer and in autumn, for milch cows; and a proof of their excellence is furnished by the fact that when the dried fodder is thrown upon the ground and covered with the best hay, cattle will throw aside the latter, which will not be touched till the stalks are entirely consumed. J. J. T.

PLOWS.

MESSRS. EDITORS—When I penned my communication on plows for the May number of your Cultivator, I had no intention of engaging in any controversy on that subject, or of detracting any from the merits of Prouty & Mears' Centre-Draught Plow. Nor would I deem it necessary to trouble you at this time, were it not for some errors into which a correspondent under the signature of "Centre Draught," in your last number, has fallen.

When I first observed the *plate* of "the Boston Centre-Draught Plow," I was struck with the obvious advantage of the *new gearing*, especially in adding strength to the plow, for it is not uncommon to break the beam, especially in very stony and rough plowing. But where there is occasion as sometimes occurs to put the plow in to the beam, the fastening would *interfere* with the work. The wheel of the centre-draught *is necsssarily* placed on *one side*, for the iron bar that runs under the beam occupies the place ordinarily allotted for that instrument.

But I am told that, what is matter of opinion is no evidence in a court of inquiry. I have not experienced this as law, but with due deference to your correspondent whose experience exceeds mine on this point, I would observe that I have yet to learn that farmers when giving their opinions on implements of husbandry are required to be tied down to such strict rules. If all were to *act* on this principle the inventors of the various new patents would be illy rewarded for their genius and labor. A good description or a good plate is sometimes sufficient for the practical man. But while your correspondent would trammel me with rules, he has himself totally disregarded such trappings. When he claims superiority for the centre-draught plow for all kinds of work, he has simply given his *opinion*. He has evidently not seen the Bergen plow, or he would not have fallen into the error of not observing that the wing or share reverses as well as the point.

I observed in my former article that I had no direct interest in the sale of any plow, which I have only to repeat. If Prouty & Mears' patent should prove superior to any yet in use, I will be benefitted thereby in common with the rest of the agricultural community. But as a matter of opinion—opinion founded on experience, I cannot assent to the doctrine laid down by your correspondent and claimed for the centre-draught plow; that a plow best formed for turning over a tough sod, is also the best for all *other purposes*—and the best for every kind of soil. For ordinary cross-plowing between rows and hills, the plowman requires no wheels and centre-draught fastenings. His machinery must be simple, and his plow light. In this section I have found Mr. Mayer's patent generally preferred for such purpose.

In conclusion I would inform "Centre draught," and the dozen to whom he alludes, that what was before stated as *belief* in reference to the invention of the self-sharpening principle as applied to points and shares, is fact. The invention belongs entirely to Mr. Bergen and was secured to him by patent in 1819. So far from the name of the inventor being lost in the lapse of time, I have the above declaration from him in propria persona, together with his acceptance of the challenge to meet the centre-draught plow at the plowing match to be held at Poughkeepsie in the fall, where there may be competitors that will outstrip either of the plows under notice.

Brooklyn, July 17, 1844. J. G. B.

CURE FOR FOUNDER.—The seeds of sunflower are the best remedy known for the cure of founder in horses. Immediately on discovering that your horse is foundered, mix about a pint of the whole seed in his feed, and it will give a perfect cure.

ORNAMENTAL GARDENING.

Those who have had the pleasure of reading the first number of Colman's "European Agriculture," will doubtless agree with me in the opinion that the author has amply fulfilled the expectations which his abilities and opportunities had raised. Much that is interesting, and a great deal that is instructive, are comprised within the eighty pages before us; and the justness of his remarks in most instances, will be freely admitted; at the same time, those who are intimately acquainted with the state of society and morals in England, in the higher as well as lower classes, will see at once that in ascribing, though indirectly or by implication, all or nearly all the vice and immorality to one class only, he has greatly erred. They will also be surprised to find him contrasting, to the disadvantage of the English laborer, their vicious habits with the *worst cases* to be found in our own country. We must not complain loudly of the abuses or illiberality of English tourists, unless we are exceedingly careful not to tread, though it be very faintly and at a most respectful distance, in their footsteps. But my object is not to criticise, but to commend the work before us; and the defects we may see are only the more visible from the beauty and excellence of the surrounding mass.

You have already given some extracts from the work, and it is now my wish to call the attention of your readers to a few remarks, where not only the pleasure, but the utility, in a physical and moral aspect, of the cultivation of grounds for trees and shrubs, is strongly enforced.

"The cultivation of flowers and shrubs and vines, is a remarkable and prominent feature in the landscape of England; and a circumstance which has given no little gratification to my national pride, has been the profusion of American plants, which are seen in the shrubberies and plantations and pleasure grounds, both public and private. * * Green houses and conservatories are almost universal in the country where any thing like a garden exists; and the better class of houses are surrounded and adorned with a great variety of flowering shrubs and plants, presenting through the season, a charming succession of gay and brilliant ornaments. Even the laborer's humble cottage, too seldom, I am compelled to admit, any thing but a picturesque object, will occasionally have its ornamental shrubs adorning its doorway, and the ivy hanging its beautiful tresses over its window, forming as it were, a mirror, set in a frame of the richest green. The village of Marr, in Yorkshire, not far from Doncaster, and the village of Edensor, in Derbyshire, near Chatsworth, and the village of Lord Brownlow, in Lincolnshire, the best built, and by far the handsomest villages I have yet seen in England, to cottages of an excellent and picturesque construction, add those beautiful rural embellishments of vines and shrubs and flowers, and at first blush compel a reflecting mind to admit the moral influence of such arrangements upon the character and manners of their inhabitants."

The sarcasm in the following remark, it will be seen is in the writer's own style: "I have said and written a great deal to my countrymen about the cultivation of flowers, ornamental gardening, and rural embellishments; and I would read them a homily on the subject every day of every remaining year of my life, if I thought it would induce them to make this a matter of particular attention and care. When a man asks me what is the use of shrubs and flowers, my first impulse is always *to look under his hat and see the length of his ears*. I am heartily sick of measuring every thing by a standard of mere utility and profit; and as heartily do I pity the man who can see no good in life but in pecuniary gain, or in the mere animal indulgences of eating and drinking."

Speaking of the facilities which we possess, in a free use of our own land, in a fine climate, and in the beauty of our native plants, for the formation of gardens and ornamental grounds, he says, "Few countries in temperate climates are richer in the floral kingdom of nature, and the luxuriance of vegetable growth, and the splendors of vegetable beauty, than the United States. Why should they not be cultivated? Was the human eye, that wonder of wonders, that matchless organ of our physical constitution, that inexhaustible instrument of the most exalt-

ed and varied pleasures, made in vain? Are the forms of beauty in the natural world, so infinitely multiplied as they are around us, made for any other purpose than to be enjoyed; and what better means can we take to strengthen the domestic affections, of all others the most favorable to virtue, than to render our homes as beautiful and attractive as possible?"

My limits do not permit me to copy the author's remarks on the vice, impurity and crime, and the disease and pestilence, generated by closely built cities, and cellars and dirty lanes, crammed with wretched inhabitants; and on the imperious necessity of providing amply all new cities with public squares and public gardens, where a pure air may be breathed at least occasionally; but the following instance of munificence cannot be passed over: "Mr. Strutt, an eminent manufacturer at Derby, employed Mr. Loudon—the late distinguished horticultural writer—to lay out, plant, and ornament these grounds, at an expense of ten thousand pounds stirling, or fifty thousand dollars; and then, with eminent liberality, gave them to the city of Derby for the public use and enjoyment of its inhabitants. Tens of thousands of pounds expended in the erection of a Corinthian column, or a marble mausoleum, would not have formed so durable or extended a memorial of him; and thousands upon thousands yet unborn, in the enjoyment of this beneficence, will invoke blessings upon his memory."

I am also compelled to omit the truly interesting description of the English parks—those princely specimens of embellished nature—with their green turf sometimes kept so smoothly shorn, "that it seems more like treading upon velvet than upon grass"—whose undulating surfaces and wide plains are overspread with broad and magnificent forest trees, many of them with ages numbered by "patriarchal centuries," and which have survived the hoarse winds of hundreds of winters, the scathings of the lightning and the tempest, the successive changes of coming and departing generations of men, but still standing "green in their old age, the mute yet eloquent historians of departed years." But how far more gratifying would be the contemplation of such magnificent scenes, if the recollection did not so often force itself upon the mind, that they have been made and kept up in too many cases by the hard and weary labor of hundreds of starving but industrious poor; and that besides, they are too often made the scene

> "Of all the savage din of the swift pack
> And clamors of the field."

Our author appears to have received a plentiful dose of this latter kind of "*sport*," which he thus describes:—"Two or three days coursing, manly and healthful as the exercise on horseback undoubtedly is, and strongly exciting as the sport is, did not quite reconcile me to it; and the wailings and shriekings of the affrighted and dying hares in the jaws of the hounds, sounded in my ears for several days afterwards, like the cries of expiring children." J.

PHOSPHATE OF LIME, &c.

MESSRS. EDITORS—In the June number of the Cultivator, I observed an article from "A Practical Farmer," of Staten Island, inquiring of the "*late Geologists of the State of New-York*," regarding the localities and quantity of phosphate of lime in the different districts. The writer speaks in a very complimentary manner of the labors of the geologists, and of the benefits arising from the results of their investigations. It is certainly very consolatory to know that even one individual in this community regards our labors of some importance, when we are so often made to feel that very many question the utility of the whole.

I will endeavor, in a few words, to answer the inquiries, so far as I am individually concerned, remarking that the quantity of this mineral in any locality yet discovered is sufficient only for cabinet specimens, and, of course, cannot come into use for agricultural purposes. My own labors, since the first year of the survey, have been confined to that portion of the State west of the parallel of Cayuga Lake; a district in which the mineral in question is not known to exist in a separate condition. The recent investigations of Mr. B. Silliman, jr., make known to us the important fact that the solid structures of the recent corals, contain phosphates of lime and magnesia, both substances equally important in agriculture. Some notice of the analysis of corals, made by Mr. Silliman will be given in the July number of the American Journal of Science,* and a more detailed account will appear in the published works of the U. S. Exploring Expedition. The general results, however, are of the greatest importance. It is well known to a large proportion of the community that the greater part of our limestone formations are of marine origin, and the materials composing them are the remains of corals, shells and other marine animals, either in a perfect state, or more or less broken and comminuted. Of these materials the remains of corals and other zoophytes form by far the larger proportion. The phosphates which these contained in their living state are of course still retained in their fossilized condition, and the immense and inexhaustible limestone formations extending from near the Atlantic coast to the Mississippi river will furnish an inexhaustible supply of this material as the rock becomes decomposed. This without doubt is a great cause of the productiveness of those soils derived from the limestones, which occupy such an immense area in the middle and western states.

All that can be said of the phosphates in the western part of New York will be readily understood. There is no locality where the mineral can be obtained by itself, but the results of this analysis prove that it exists in all the limestone formations throughout that portion of the State; and though it may not in this form be found profitable for exportation, it nevertheless offers an inexhaustible source of fertilization to those farmers in the neighborhood of limestone deposits.

These facts also offer another subject for consideration, which is in the proper selection of limestone for agricultural purposes. Since the phosphates occur in the corals it is very evident that the coralline limestones, or those composed in the greatest degree of corals, should be selected for the purpose. Doubtless all the limestones of marine origin contain these substances, but an examination of the different strata will prove that some portions contain a much greater number of corals than others. The relative value of these different strata can, however, be easily tested by analysis or by a few experiments on the field. Since agriculture is rapidly approaching to a rank among the exact sciences, every fact or experiment of this kind should be recorded, for it is only by this means that we can arrive at just conclusions.

The crystalline limestones have to a great extent and perhaps entirely resulted from an alteration of the sedimentary strata; and in these the phosphate of lime is often separated, forming crystals or crystalline masses. This, doubtless, arose from the same cause which changed the nature of the mass around. The phosphate of lime is not, however, uniformly disseminated throughout any mass of limestone, but occupies certain beds or ranges, and may perhaps have resulted from the more coralline portions of the mass. This supposition derives additional force when we know the fact that, in the lower stratified limestones, the massive corals occupy a very limited thickness of the whole, and it may not be irrational to conclude that this portion has produced the phosphates as we now find them. I would not be understood however to deny the existence of the mineral in other portions of the crystalline limestones, for we often find it in minute crystals, and it may be so disseminated as to be invisible.

I doubt not but the inquiries of your correspondent will call out the observations of others, which may result in much important information on this subject. The value of phosphate of lime in an agricultural community can scarcely be overrated, and any person who might discover an extensive deposit of this substance would confer an important benefit upon the community. Of the value placed upon this substance by the English agriculturists we may form some opinion, when, upon the knowledge of an extensive locality of the min

* The Journal had not been received when this article was written.

eral in Spain, a competent person (Dr. Daubeny I believe) was sent out to examine it, and the great distance from the coast was the only obstacle to its extensive importation into England.

I wish it were in my power to furnish more directly important information to your correspondent, whom I suspect to be somewhat of a geologist as well as "practical farmer." A large amount of interesting matter upon this subject and other similar ones, could easily be furnished to the inquiring farmers of our country, and when they shall feel an interest in the subject the facts will readily be forthcoming. If the farmers would but make their inquiries definite, they could readily be answered, but there is far less inducement to give information when the writer does not know that even *one* of his readers may care to learn what he is endeavoring to teach.

With my best wishes for the prosperity of your correspondent and all practical farmers, I am

Very truly yours, &c., JAMES HALL,
Late Geologist of the 4th District of the State of N. York.
Albany, July, 1844.

USEFULNESS OF TOADS.

In proportion to what he is capable of doing, there is not a more useful animal to man than the toad. He has not bad habits, and in the pursuit of a livelihood he is sure to benefit some body. Yet how often do we find him the victim of an ignorant and cruel prejudice. Naughty children are allowed to torture and kill them through mere wantonness; and the fastidious lady sometimes orders them expelled from her garden, lest her nerves might be disturbed by meeting them in her walk.

The spawn of the toad, like that of the frog, is deposited in the water. As soon as the young have attained the use of their legs, they take to the land, and subsist on such flies, beetles, and worms, as they are able to swallow—thus in obtaining their subsistence, rendering a very essential service to the farmer and gardener. The number of insects in this way destroyed, is immense. As many as fifteen beetles have been found in the stomach of a single toad. It feeds mostly in the night, at which time insects are abroad. It is quite amusing to see the toad seize its prey. In the dusk of evening, it may be seen through the summer season, near the places most frequented by insects, snapping up, almost with the quickness of lightning, every bug or worm that makes its appearance.

In the days of boyhood, we have often amused our friends by the exhibition of a large pet toad. During the day we kept him in a little pen in the shade, covered by a board. At eventng, we let him out and fed him with "white grubs," "cut-worms," &c., which during the day had been detected in their depredations on the cornfield. Sometimes when his appetite was keen from twenty-four hours' fasting, we would enjoy the sport of seeing him swallow a big horn-bug or "pinching-bug." And such a *face* as the toad would "*make up!*" But after scratching and straining a little, he would get him down. On one occasion this toad swallowed in rapid succession, *twelve* full grown larvæ of the may-bug, (the "white grub.") This will give some idea of the great benefit which results from the destruction of insects by this animal.

Several years ago, a gentleman advertised in the newspapers for toads to put in his garden, for which he offered a small sum each, and if others would follow his example, and thus induce the boys to save the toads alive instead of killing them, all would be gainers.

NATURALIST.

MESSRS. EDITORS—In the Cultivator of March 1843, A. R. McCord complains that the ants injure his peach trees. One of the greatest annihilators of ants, as well as other insects, in this country, I conceive is the toad. A few of these useful quadrupeds in a garden, are a pretty sure guarantee against the destruction of plants by ants, bugs, worms and flies. Where indigenous to the country, they can be easily collected and placed in the garden. Not being very swift on the foot, they do not wander far from home, but have a strong attachment for the locality in which they reside, and will, terrapin like, sometimes return to the place from which they are forcibly driven, unless prevented by some obstruction which they cannot overcome. The adage says, "there is no telling by the looks of a toad, how far he can hop."

They are a very grave and sedate looking animal, and if they do not "go forth at eventide to meditate," they most certainly choose that time to roam abroad in quest of food. For this purpose they are furnished with a slender and flexible proboscis-like instrument, three or four inches in length, which they throw from their mouths with great velocity, snap an insect, and convey it with inconceivable rapidity, to the natural receptacle of food. This proboscis-like apparatus lies rolled up in the mouth, and serves them for the same purpose as that of the elephant; is longer and more powerful in proportion to the size of the animal. In symmetry of form they may well compare with the elephant, bating that necessary appendage to the beauty of all quadrupeds—a tail.

The name of a toad has been too long a bye-word and a reproach. They are one of the most innocent and useful of animals. Vegetables they never injure. Why, when and how the almost universal antipathy to toads took its rise, would be a curious inquiry for the naturalist and philosopher. It will probably be conceded that the unrivalled English epic poet contributed his full share to the formation of a prejudice against them in the minds of his readers, by representing the arch fiend as sitting at the ear of our primitive mother, insinuating the baleful poison of his seductive tongue—"squat like a toad." If the toad had not been one of the most innocent of animals, it is to be presumed the prescient Lucifer would not, on that occasion, have assumed its shape.

The toad needs a shady arbor with mellow ground, which can be easily burrowed, where he may retire on the approach of day-light, to repose himself, sheltered from the heat of the noonday sun.

A few years since I had occasion to remove a bank of earth in my garden which had been undisturbed for more than forty years. It was filled with an innumerable multitude of ants. As Peter Pindar wished, when the rats destroyed one of his most delectable odes, that they might fill the maws of cats—so I had a strong desire that the ants might fill the maws of toads, I procured a few, gave them possession of the premises, and the ants were soon missing.

It is perhaps worthy of observation and inquiry whether the tree toad may not be uselul in preventing the ravages of insects on trees. I have noticed that apple trees on which these toads make their home, are seldom infested with caterpillars. Goldsmith, in his Animated Nature, has omitted to notice this species of the toad family.

D. J.

Newbury, Vt., July, 1844.

FARM SCHOOL.

MR. LUTHER TUCKER—The Farm School, which I incidentally mentioned a short time since, has commenced, under the supervision of Stephen Sweet, Esq., late of West Troy. Our motto is, and ever will be, "to improve the soil and the mind." The school will be limited to ten boys, (including my own,) of decidedly moral and virtuous character—no others can have an abiding place with us, nor can drones, under any circumstances, be harbored in our hive.

That labor is honorable, we intend both to preach and to practice. Particular attention will be paid to physical training, and it will be our aim to carry out the views expressed in regard to the Elm Craig School, in your July number, to which we would particularly refer. I rejoice to see the agricultural thermometer rising. It speaks nobly for Tennessee. Will Mr. Fanning forward us his pamphlet? We like the extract so well, we want the whole story.

We commence with my four sons only, under the plain and unassuming title of Farm School, meaning that merit and not name alone shall be our recommendation. The growing and cultivating of fruit trees, from the first germ in the nursery, to the fruit-bearing tree of the orchard, will be taught; and another year, it is intended to attach

a cocoonery, where the silk business in all its variety will be illustrated.

Our location is pleasant, healthy, and of easy access, being 9 miles west from Saratoga, and 5 miles northwest of Ballston Springs. Terms, $150 per annum, all charges included, payable quarterly in advance.

For further particulars address the undersigned, (post paid) Ballston Spa, N. Y. SETH WHALEN.

BEES.

MESSRS. EDITORS—I see you frequently devote a column in your valuable paper to *bees*. Some things have recently come under my observation which are new, and somewhat novel to me, relative to the swarming of bees. I supposed until lately, that when bees swarmed there was but one queen bee came out with the swarm. But recent experience and observation have convinced me otherwise. I find that not only two or three queens come out, but sometimes as many as five or six leave the hive at the same time. If you think the following *facts* are worthy an insertton in your paper, and would interest any of your numerous readers, and throw any light on the nature of bees; or elicit any remarks from some of your old and experienced correspondents who have long been acquainted with bees, you are at liberty to make them public.

On the 25th of May, between 11 and 12 o'clock, I had a hive of bees which commenced swarming. They flew some 30 or 40 yards, and began to settle on the limb of a peach tree about ten feet from the ground.

Before they had half settled, another hive, standing ten or twelve feet from the other, commenced swarming; and before these had all come out, another hive standing three or four feet from the one last mentioned, commenced swarming. They all followed in the same train of the first swarm.

I got a hive and began to take down the first that had settled, with a basket that I use as a hiver. The other kept settling in the same place, and as I could make no distinction between swarms, I continued taking down, until I had taken them all down and put them into a large square hive. They remained quiet during the afternoon, but did not all incline to go into the hive; a quart or two remained outside. At night I carried them to the place where I intended they should stand. The next morning before sunrise I made them a visit, and found nearly all in the hive. A little distance from the mouth of the hive I found a dead queen. I raised the hive, and saw another dead queen on the bottom board. I took them both away. About two hours after, I found two more dead queens drawn out of the hive. A few bees were flying about, as I have frequently seen them when they have lost their queen, but the main body of the bees were quiet. About 12 o'clock there appeared to be a good deal of commotion among them. I went to my dinner; was gone about half an hour. On my return, I found the hive *empty*, except a few scattering bees. On the bottom board lay another dead queen which made *five* that I had found dead. I looked around to see if I could find any trace of the absconded bees. About 20 or 25 yards from the hive, I found a swarm of bees settled on a peach tree, which I supposed to be a part of those that had left the hive. There could not have been more than one third or one half at the farthest, of what I had put into the hive the day before. What had become of the others I could not tell. I went for a hive, but before I got one ready they all took their wings and went to the woods. I would here remark that the first hive that commenced swarming the day before had swarmed *three* times this season before, and each time had returned to the old hive, of their own accord. The second time I knew a queen came out, for I found her in the grass, and lifted her up, and she arose into the air. Whether she got lost, or returned to the old hive with the bees I could not tell. On the next day (May 27,) the same hive that first commenced swarming on the 25th, swarmed again. I was present when they came out. Seeing a number of bees on the grass near the hive, I looked for the queen. I soon found *one* and took her prisoner, as I was determined to put the bees back into the old hive. The bees flew a short distance and settled on the limb of a tree about 12 feet high. I got my hiver and took them down. I had the curiosity to examine them and see if there was another queen, and to my surprise I found *three* more, all of which I made prisoners. I then let the bees go back into the old hive. The next day (May 28,) I was informed that a swarm of bees had come out and settled on a tree in the yard. I did not see them till they were all settled; of course I could not tell what hive they came out of. I got my hiver and took them down. I soon found one queen; cropped one wing to prevent her from flying away, and put her into a hive. On farther examination I found another, which I took away and killed. I put the bees into the hive, and set it where I intended it should stand. During the afternoon I passed the hive several times. At one time I discovered a queen outside of the hive which had *not* her wing cropped. She had hid herself in the bees, and I had overlooked her. I took her prisoner. The next day the bees came out of the hive, and went directly to the woods. I then ascertained for a certainty that *five* queens had been killed, including what I had killed myself. And allowing *one* to go off with the swarm, there must have been at least six queens when they first swarmed.

On the 30th, the hive where I put the bees back on the 27th, (after destroying four queens,) swarmed again. I examined them, and found two queens. One I killed—I cropped one wing of the other and put her into a hive with the bees; I thought there was no use in putting them back again into the old hive, they appearing determined on swarming, and would multiply queens as fast as they wanted them. JACOB HITCHCOCK.

Dwight Mission, C. N., June 8, 1844.

Several queens are often brought out in a hive near the same time, but as only one is necessary to a swarm, the others are either killed about the time they come out of their cells, or combats ensue between those queens attached to the new swarm, and are continued till only one remains alive. Such is the deadly hostility which is manifested by the queens towards each other, that two can not long live in the same hive.—EDS.

POLITICAL ECONOMY

MESSRS. EDITORS—The rain, which has been pouring for three days, has afforded an opportunity to read your paper of the current month. On page 219 is the following wise conclusion, "a nation's imports should not exceed its exports."*

Had this been the first time I had seen this sophism, I should have passed it in silence; but the foolish sentiment has been so often printed by those who ought to know better, that I am unwilling that your Alabama correspondent should go unanswered.

If a wagoner from Vermont should take a load of *notions* to Boston, and a load of groceries back, as the avails of his export load, which was not worth any more on his return, than he gave for his load at starting, how long would it take him to get rich, or for the town in which he lived to become rich, by a thousand such transactions?

Any boy can understand that the man would lose his own time and use of his team, wear, tear and expenses.

When ships are employed on similar errands to all parts of the globe, the magnitude of the affair, or some other cause, seems to involve it in a fog, and every little while some wiseacre is crying about the ruinous effects of a balance of trade. Some newspaper scribblers will

* That the reader may understand the position assumed by our Alabama correspondent, we annex the paragraph from which Dr. Bates makes this quotation. It is as follows:

"I will not produce arguments to show that economy is a blessing and extravagance a curse. The experience of any man who has reached thirty years of age, and is possessed of an ordinary understanding will respond in the affirmative. A farmer, to be economical in the use of money, must by proper care prevent the necessity of paying out money in the way of expenses, or in other words, he must live within himself. In order to do this, it is not necessary that he should make all he needs. By no means. But it is essentially necessary that he should make his expenses conform to the amount of his annual income —just as a nation's imports should not exceed its exports."

give us all the tables from the Treasury department since 1789, to show that we are four hundred millions poorer than we should be, because our balance of imports amount to nearly this.

If it had not amounted to this, and much more, we should have been poor indeed. It is truly astonishing that the balance has been so much, when we reflect that so much has been paid abroad for the old national debt and interest, and so much is yearly absorbed in paying interest on State, corporation and individual loans abroad.

True, a great part of these latter have come home in goods and swelled the import tables. Our exports are valued at the place of departure, and our imports, until 1833, were valued at the foreign invoice with 20 per cent added for those from beyond the Cape of Good Hope, and 10 per cent for all others, as cost of transport and profit. Since then, they are valued by the true price at the port of entry. Now it is easy to see, the value of imports should be so much greater than that of the exports as to cover the use of ships, wages of men, finding, insurance and profits.

The profits or balance at this time would be nearer thirty millions per annum, than twenty, if we were not obliged to leave in Europe some twelve or fifteen millions of interest money.

That individuals or nations who *consume* more than they *produce*, must grow poor, is evident; but that a nation should not import more than they export, is sheer nonsense. Yours, &c. JAMES BATES.

Norridgewock, Me., July 12, 1844.

P. S. Hay, except on old fields, will be good. Grain and potatoes never looked better, corn is small, but of healthy appearance. The season has been cool, the early part dry. But latterly, rain in abundance.

THE SHEEP.

History, Structure, Economy, and Diseases of the Sheep—Illustrated with fine engravings. By W. C. SPOONER, V. S., London.

We acknowledge the reception of a copy of the above work. We consider it one of the most valuable publications that has yet been issued on the subject to which it relates. It is divided into three parts. The first relates to the Breeds of Sheep, with their Origin and Ancient History—the second to the Structure and Economy of the Sheep—and the third to the Diseases of the Sheep. We here present our readers with a valuable extract from the last division of the work, on the subject of the most destructive diseases to which the sheep is liable. Although it has not yet, from the drier nature of our climate and herbage, prevailed in this country, to the extent it has done in England and some other countries, we are satisfied that it has carried off many flocks, though the owners have been generally totally ignorant of the name and nature of the disease:

THE ROT IN SHEEP.

"The first symptoms attending this disease are by no means strongly marked; there is no loss of condition, but rather apparently the contrary; indeed, sheep intended for the butcher have been purposely cothed or rotted in order to increase their fattening properties for a few weeks, a practice which was adopted by the celebrated Bakely. A want of liveliness and paleness of the membranes generally may be considered as the first symptoms of the disease, to which may be added a yellowness of the caruncle at the corner of the eye. Dr. Harrison observes, "when in warm sultry and rainy weather, sheep that are grazing on low and moist lands feed rapidly, and some of them die suddenly, there is fear that they have contracted the rot." This suspicion will be further increased if a few weeks afterwards the sheep begin to shrink, and become flaccid about the loins. By pressure about the hips at this time a crackling is perceptible now or soon afterwards, the countenance looks pale, and upon parting the fleece the skin is found to have changed its vermillion tint for a pale red, and the wool is easily separated from the pelt; and as the disorder advances, the skin becomes dappled with yellow or black spots. To these symptoms succeed increased dulness, loss of condition, greater paleness of the mucous membranes, the eyelids becoming almost white, and afterwards yellow. This yellowness extends to other parts of the body, and a watery fluid appears under the skin, which becomes loose and flabby, the wool coming off readily. The symptoms of dropsy often extend over the body, and sometimes the sheep becomes *chockered*, as it is termed—a large swelling forms under the jaw—which, from the appearance of the fluid it contains, is in some places called the watery poke. The duration of the disease is uncertain; the animal occasionally dies shortly after becoming affected, but more frequently it extends to from three to six months, the sheep gradually losing flesh and pining away, particularly if, as is frequently the case, an obstinate purging supervenes.

With regard to our remedial measures, little satisfactory matter can be offered. There are few drugs which the laboratory can supply but what have been tried and found wanting; and though salt has appeared to have had more effect on it than any thing else, it must be confessed that hitherto medicine has offered no remedy for this formidable and destructive disease. Prevention must be our chief aim, and it is satisfactory to know that much can be done by means of extensive and general draining; and it is hoped that before long, by the aid of the legislature and the conjoint energy and capital of both owners and occupiers of land, the system will be adopted almost universally, by which alone this disease is likely to be controlled or eradicated; and at the same time increased labor employed on the land, and more abundant crops obtained from the bounty of nature.

It appears that, whether as a preventive or as a cure, salt has a more powerful influence over this disease than any other remedy. Its presence preserves even wet pastures from the disposition to give the rot, for it is well known that salt marshes are free from danger. In what manner salt thus operates it is difficult to explain. The blood in this disease is in a state of unnatural dilution—it is deficient in its fibrous and coloring principles; now, whether salt, which is a combination of chlorine and soda, acts by restoring some portion of those salts of which the blood is deficient, or whether it is prejudicial to the vitality of the flukes and the eggs, or whether it acts by the antiseptic power which belongs to chlorine, we cannot tell, though its influence over the disease is generally acknowledged.

Our own advice as to remedial treatment may be summed up in a small compass. The sheep should be removed from the unsound pasture as soon as possible, either to a salt marsh or the driest pasture that can be found; as much salt may be given as the animals will take with their food; to this the sulphate of iron may be joined. Half a drachm daily for each sheep, with the same quantity of ginger, may be given innourishing gruel. An aperient should be given once or twice during the treatment, and may consist of one or two ounces of sulphate of magnesia, or a large table-spoonful of common salt dissolved in warm gruel or water. Food should be given in as nutritious form as possible; and a pint of beans daily will be an excellent diet with good hay on sound pasture.

Though turneps cannot be considered as a cause of rot, yet from the superabundance of water they contain, they are highly prejudicial to sheep that are affected with the disease, particularly if taken whilst a hoar-frost is on them. Calomel has been strongly advised, but the recomenendation, as far as I am aware, has not been backed by any successful cases. If tried by way of experiment, about five grains daily, with four of opium, supended in thick gruel, may be repeated once a day for the space of a week at a time.

PHILOSOPHY OF WOOL.

Mr. FOSTER of the Tennessee Agriculturist, and a correspondent of the same paper, M. R. COCKRILL, Esq. object to the theory advanced by our correspondent, p. 156, on the influence of temperature on the growth of wool. As it is a subject of much importance, and one upon which the light of experience is needed, we copy Mr. C.'s remarks:

"MESSRS. EDITORS—I observe in the May number of the Albany Cultivator, page 156, Mr. L. A. MORRELL'S

Philosophy upon Wool; he would bring you to the conclusion, that warm climates would not produce fine wool. As wool growing is at present becoming a matter of importance, and will finally be more so, to the American people, than any other one article; therefore, it is requisite that all the light should be given on the matter, to prevent improper conclusions. It is my opinion, that a low latitude, say 32 deg. north, is far better than the northern States for growing wool. I have learned that the best situation for sheep to maintain true health, and therefore grow the most even and uniform fleece, is where they live all the time on suitable succulent food. Mr. Morrell states, that you find the largest part of the fibre directly after shearing, which is true; and he attributes it to heat; I think it is caused by the great effort, when the animal is stripped, to re-produce his natural covering. A more rapid growth is always discovered, when all animals shed their coats; and the same is the case with sheep when they are stripped of theirs—and the largest part of the fibre is then produced, and not in the great heat of summer as he would have you to conclude from his philosophical theory. If you leave the fleece upon the fine wooled sheep more than one year, they do not shed, if they remain healthy; but the size of fibres is not increased, but on the contrary, it is weak or tender as long as left on, and small in fibre. The animal must, of course undergo great heat; his philosophy, therefore, would bring you to the conclusion that the fibre would be enlarged, and the fact is the reverse. I state that latitude 32 deg. is the true wool region, because there they can live all the time upon succulent food, which, in my opinion, makes the true uniform soft staple of wool, suitable to the manufactory of the best broadcloths. There is much country in the United States that is well suited to produce fine wool; but it can, of course be produced to greatest advantage where the sheep can graze all the time. I believe much more depends upon the food than the climate; and no doubt the true cause of traveling the sheep in Spain was to sustain them; and grazing them all the time, agrees with my philosophy or experience. The best and softest part of the fleece is grown in the spring just before shearing, when the grass is most succulent and inviting; but let it remain until there is too much fleece to support, and the wool-forming qualities are not sufficient to grow and support the life of the fleece. Mr. Morrell says the heat or warm weather opens the pores of the skin, and larger fibres are therefore formed. True, it does of all animals; passing off heat from the body, I think, is different from that of producing covering. I find by examination, that the fibre grown in June, is finer than that which is produced directly after shearing, which was done last of April, in mild, pleasant weather. I have been carefully collecting samples of the best wool I could procure, either grown in America or Europe; and I think the best wool I have ever seen, I grew in Mississippi about latitude 32 deg. north. If climate, as Mr. Morrell thinks, and that a cold one, is the only country for producing fine wool, why is England not growing of it for her factories. I do hope Mr. Morrell will examine this subject farther, and give the country his experience. I assert, that the State of Tennessee can grow better wool than Vermont, or any of the northern States, provided the proper stock of sheep be procured—and of course much cheaper, as our winters are about 100 days to feed, and theirs 150 to 180 days, and lands much cheaper. I would be pleased to furnish Mr. Morrell, or any other northern flock-master, a sample of wool grown in our hot climate; then they can compare for themselves; and it is by proper comparisons that we come to correct conclusions. I do hope that Mr. Morrell, and all others, may construe my remarks as trying to add something to this truly important matter, wool-growing.

MARK R. COCKRILL.

Near Nashville, June, 1844.

PRACTICAL RECIPES.

From the United States Receipt Book

BURNT RHUBARB IN DIARHÆA.—It may be useful to know the value of burnt rhubarb in diarhœa. It has been used with the same pleasing effects for more than twenty years. After one or two doses, the pains quickly subside, and the bowels return to their natural state. The dose is from five to ten grains. The manner of preparing it is to burn the rhubarb powder in an iron pot, stirring it until it is blackened; then smother it in a covered jar. It loses two-thirds of its weight by the incineration. It is nearly tasteless. In no one case has it failed where given.

TO EXTRACT THE ESSENTIAL OIL FROM ANY FLOWER.—Take any flowers you like, which stratify with common sea-salt in a clean earthen glazed pot. When thus filled to the top, cover it well and carry it to the cellar. Forty days afterwards, put a crape over a pan, and empty the whole to strain the essence from the flowers by pressure. Bottle that essence, and expose it four or five weeks to the sun and evening dews to purify. One single drop of that essence is enough to scent a whole quart of water.

RASPBERRY SYRUP.—To every quart of fruit add a pound of sugar, and let it stand over night. In the morning, boil and skim it for half an hour; then strain it through a flannel bag, and pour it into bottles, which must be carefully corked and sealed. To each bottle add, if you please, a little brandy, if the weather is so warm as to endanger its keeping.

RASPBERRY JAM.—Take one pound loaf sugar to every pound of fruit; bruise them together in your preserving-pan with a silver spoon, and let them simmer gently for an hour. When cold put them into glass jars, and lay over them a bit of paper saturated with brandy; then tie them up so as carefully to exclude the air.

TO EXTRACT IRON MOULDS.—Rub the spot with a little powdered oxalic acid, or salts of lemon and water, let it remain a few minutes and rinse in clean water.

PREMIUM CHEESE.—For a cheese of 20 pounds, a piece of rennet about two inches square, is soaked about twelve hours in one pint of water. As rennets differ very much in quality, enough should be used to coagulate the milk *sufficiently* in about forty minutes. No salt is put into the cheese, nor any outside during the first six or eight hours it is being prepared; but a thin coat of fine Liverpool salt is kept on the outside during the remainder of the time it remains in press. The cheeses are pressed forty-eight hours, under a weight of seven or eight cwt. Nothing more is required but to turn the cheeses once a day on the shelves.

TOMATO CATSUP.—To a gallon skinned tomatoes add 4 tablespoonfuls of salt, 4 do. black pepper, half a spoonful allspice, 8 red peppers, and 3 spoonfuls mustard. All these ingredients must be ground fine, and simmered slowly in sharp vinegar for 3 or 4 hours. As much vinegar is to be used as to leave half a gallon of liquor when the process is over. Strain through a wire-sieve and bottle, and seal from the air. This may be used in two weeks, but improves by age, and will keep several years.

TO PRESERVE APPLES, PEARS, &c.—Take apples or pears, and peel them, then cut them into eighths, observing to extract the core; dry in a kiln or oven until quite hard. In this way fruit is kept in the United States for two or three years. For use, wash the fruit in water, then pour boiling water on it, let it stand for a few minutes and use it as fresh fruit. The water forms an excellent substitute for fresh juice.

BUTTER—Is improved by working the second time after the lapse of twenty-four hours, when the salt is dissolved, and the watery particles can be entirely removed.

BLACKBERRY SYRUP.—We are indebted to a friend for the following receipt for making blackberry syrup. This syrup is said to be almost a specific for the summer complaint. In 1832 it was successful in more than one case of cholera.

To two quarts of juice of blackberries, add one pound loaf sugar, ½ oz. nutmegs, ½ oz. cinnamon, pulverised, ¼ oz. cloves, ¼ oz. alspice, do. Boil all together for a short time, and when cold, add a pint of fourth proof brandy. From a teaspoonful to a wine glass, according to the age of the patient till relieved, is to be given.

CURE FOR LOCKED JAW IN HORSES.—It is said that pouring water along the back from a watering pot, for a considerable time without intermission, will effect a cure. —*Selected.*

CLOVER AS A FERTILIZER.

"S. W." in the N. Genesee Farmer, thus sums up the arguments in favor of plowing in clover:

"Chemistry tells us that a green crop of clover is the cheapest fertilizer for the following reasons:

1st. The stalks and leaves of clover contain according to their weight, about 5 times as much nitrogen (the magic wand of manure,) as herds grass or most other green crops.

2d. The long tap root of the clover brings up from the sub-soil below the reach of the plow, those substances which are wanted in vegetation, retaining them in the leaves and stems of the clover to be given out when plowed under as food for the growing wheat.

Lastly, large masses of the broken roots of clover remain in the ground; these roots are worth, as a manure, according to Boussingault, about four times their weight in stable dung."

STOCK SUBSCRIPTION.

IN consequence of the increased demand for the *new and improved* article called *Poudrette*, made by the Lodi Manufacturing Company, and the prospect in future of a large yearly demand for the article. the Directors of the Company, *to increase the working capital*, have ordered the books of subscription to the stock of the company, under the 6th section of the act of incorporation, to be opened for an additional capital of $10,000, under the direction of the subscriber, as President of the said company.

Notice is hereby given that the books of subscription to the stock of the company, called the *reserved stock* under the 6th section of the act incorporating the company, will be opened at the office of the company, No. 43 Liberty-street in the city of New-York, on Monday the 2d day of September 1844, at 10 o'clock in the forenoon of that day, and will continue open from day to day, until the said stock shall be subscribed for.

The directors have stipulated that an annual dividend in *Poudrette* of 50 bushels to each share, for the term of five years shall be delivered to such shareholders: and after the period of five years to divide equally with the other stockholders. No person is permitted by the act to subscribe for more than 5 shares: and the sum of $100 a share is to be paid at the time of subscription. The *first dividend* on this stock, to be paid in December, 1844.

ANTHONY DEY,
President of the Lodi M. Co.

N. B. Any person at a distance from the city of New-York, wishing to subscribe for from 1 to 5 shares of the stock, may address a letter to the President, authorizing him to subscribe in the name of the writer: and may remit the money as soon thereafter, within a reasonable time, as he can with security to himself, on the receipt of which the certificate will be furnished. A pamphlet will be furnished gratis, containing all necessary information, by applying to the President, post paid. The price of Poudrette per bushel to stockholders, is only 12 cents.

New-York, July 17, 1844.

FINE FARMS FOR SALE.

THOSE very superior Farms situated near Galway Corners, in the county of Saratoga, collectively known as the Earl Stimson Farm, will be sold cheap and on terms most accommodating to the purchasers as to credit. The property consists of about 340 acres, is so situated as to be conveniently divided into three or four farms, all having the necessary buildings, and will be sold together or in parcels, to suit purchasers. Each farm is properly divided into pasture, tilled and wood land, and is in the highest state of cultivation, fenced in the best manner and with the most durable materials. The property comprises among other buildings, a large and convenient hotel, which is a favorite resort of families in the summer on account of the superior healthiness and beauty of the country. The farming buildings of all kinds are most extensive and convenient for all the purposes of agriculture and the raising of stock. The premises also include a country store, a most eligible location for a country merchant, having been occupied as such for about forty years. It is within two hours drive of Ballston, Saratoga, and Schenectady. The farm is well known among leading agriculturists, and in the agricultural periodicals, as the Pattern Farm. For terms, &c., apply to J. OAKLEY,
Oct. 1.—tf. No. 75 Nassau street, New-York.

PROUTY & MEARS'

Patent Cente Daught Self-Shapening Plows

OF various sizes and prices, from $4,50 to $13 each, with an extra point and share. Wheels will be attached when required. These plows are now believed to be the most perfect plows in use. They are strong, and can be kept in repair at a small expense. Among the premiums which have been received for these plows the following may be named: at Worcester $100; Boston $20, and a gold medal; New-York a gold medal; from the Philadelphia Agricultural Society $10; at Wilmington, Dela., first premium; at Govanstown, Md, silver cup; at Prince George, Md., silver spoon. Also Subsoil Plows at 6, 8, 10 and 12 dollars each. For sale wholesale and retail at the Seed and Implement Ware-house, No. 176, Market-st., Philadelphia, by m. D. O. PROUTY.

BEMENT'S AMERICAN HOTEL,

No. 100, State-street, Albany.

THE subscriber most respectfully announces to his friends and th public generally, that he has taken a lease for a term of years, the American Hotel, No. 100, State-street, Albany, which has been thoroughly repaired, completely renovated, and newly furnished throughout; and in quality of beds, cleanliness of rooms, will compare with any other establishment in the city.

In location, this house has many advantages, being situated in the centre and on one of the most beautiful and airy streets in the city; within a few moments walk of the Eastern and Western Rail-Road depots, and the landings of the steam-boats; about midway between the Capitol, City Hall, public offices, the banks, post-office, and business parts of the city, renders it very convenient for the man of business.

The subscriber places much reliance on the continuance and support of the *Agriculturists* throughout the union, who may visit the city, and pledges himself to spare no exertions, to render their stay agreeable, should they favor him with their company.

Three Hills Farm will be carried on as usual, under my own superintendance, by a careful manager, and the breeding and rearing improved stock, will be continued as heretofore. C. N. BEMET.

Albany, July 1, 1844.

GREAT SALE OF ELECTORAL SAXON SHEEP.

THE undersigned will sell at vendue the two flocks of *Pure Electoral Saxon Sheep*, belonging to the estate of the late Henry D. Grove, as follows:

1. That at Grainger, Medina co., Ohio, consisting of about 400 sheep, on the farm now occupied by them, on the 30th of *September next.*

2. The home flock, at his late residence in Hoosick, Rensselaer county, N. Y., consisting of about 350 sheep, on the 15th of *October next.*

A rare opportunity is offered to those who may be anxious to improve the quality of their flocks. The following is the opinion of the distinguished manufacturer who has usually purchased Mr. Grove's wool, of the character of these flocks:

"The purest blood in this country was introduced by the late Mr. Grove in his own flocks, the wool from which I have been familiar with since their importation in 1827. In point of fineness and admirable felting qualities, this wool is unsurpassed by any flock in this country, and the fleeces average about half a pound each more than any other I am acquainted with of equal fineness. SAM'L LAWRENCE.

Lowel, April 9, 1844."

Terms of sale, cash.—Reference, Sam'l Lawrence, or either of the subscribers.

Buskirk's Bridge, April 20, 1844.

ELIZA W. GROVE,
W. JOSLIN,
my1.—5t S. A. COOK.

FIELD SEED STORE.

THE subscriber continues to keep constantly on hand at his long established Seed Store, a supply of the best quality and kinds of Field Seeds, viz:

Red Clover, of the large and small growth,
Timothy, Red Top, or *Herd's Grass, Orchard Grass,*
Lucerne, or *French Clover, White Clover,*
Trefoil, Kentucky Blue Grass, &c. &c.

Also, the different varieties of Wheat, as White Flint, Red Chaff, Mediterranean, and English—for sale in lots to suit purchasers at moderate prices, by ISRAEL RUSSELL,
Feb. 1, 1844.—mar. oct. 26 Front-street, New-York

N. B. The following description of some superior English Wheat sown in the month of October last, the product of which will be for sale at the above Store. is given by a respectable English farmer in the State of New-Jersey, who sowed about eleven bushels, a sample of which can yet be seen. "It is called the Uxbridge White Wheat, and is the most noted Wheat they have in England, it being of fine quality, always commands a high price, as the flour is used by the biscuit bakers in London; it is great for yielding, and puts out a much larger ear than any wheat I have seen in this country. I saw when in England, three years ago, on my brother's farm in one field, 120 acres, that yielded 40 bushels and upwards to the acre. It grows very strong, and is not liable to be laid by heavy rains. I will warrant it free from any soil whatever. I did not see in the eleven bushels, a particle but Wheat; and I have sown it on Clover seed, on purpose that there shall be nothing but Wheat; and I will put nothing in the barn with it, so as to put it beyond the possibility of a doubt of its having any thing in it or getting mixed with other Wheat, which through carelessness is often the case. I have grown a great deal of it myself in England, and know from experience that for yield and quality, there is no Wheat to compete with it. Its general weight is from 64 to 67 lbs. per bushel. It is smooth chaff, and easy to thrash, which is not always the case with smooth chaff Wheat."

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☞ ADVERTISEMENTS inserted in the Cultivator, at $1,00 per 100 words for each insertion.

DEVON CATTLE.

HAVING had frequent enquiries last season for Devonshire Cattle, I now have the satisfaction to state, that I can accommodate those who wish, with some good Calves, Yearlings or Two-year-olds, Bulls or Heifers. E. P. BECK.

Sheldon, Wyoming Co., July 1844.—2t.

SUPERIOR FARMS FOR SALE.

TWO superior productive farms in Rensselaer county, 2 miles from Hoosic Falls. The farms are about one hundred acres each, and so situated as to be conveniently worked as two or one farm: each having the necessary buildings, and being judiciously divided into pasture and tilled land, all recently fenced with entire new materials in the most durable manner. The land is all of the first quality, and its present state of cultivation would bear a good comparison with any land in the county. These Farms will be sold together or separate, on terms most accommodating as to price and credit. Apply to

Lansingburgh, July 16, 1844. ALEXANDER WALSH.

AGRICULTURAL IMPLEMENTS, &c.

THE undersigned are Agents in this city to sell the following celebrated machines, viz:

Hussey's Premium Corn and Cob Crusher.
Dickey's " Fanning Mill.
Platt's " Portable Grist Mill.
Hovey's Premium Straw Cutter, (Spiral knives.)
Warren's " "
Hull's Stalk and Straw Cutter.

Being proprietors of the now celebrated "Warren's Improved Portable Horse Powers and Threshing Machines," for one, two and four horses, they continue to manufacture and sell them with increased success and satisfaction. Of the two horse machines, one correspondent states, "after a fair trial with barley and wheat with two horses, I can thresh in a clean and thorough manner, at least 30 bushels of the former, in 1 hour, with comparative ease to the horses; and this day, without driving them at all hard, in sixty minutes, 200 sheaves of wheat of a large size were threshed out in a clean and excellent manner, which is about 15 bushels. The straw, after threshing, is easily bundled; and as it comes out whole and unbroken, I consider these machines on that account important; and as only three hands are required to do the work well, I think the great saving of labor such an item as to make them what is much needed by many of our farmers in this section of country."

L. BOSTWICK & Co.
Aug 1—1t. 146 Front-street, New-York

TO FARMERS, HORTICULTURISTS, &c.

GUANO.—The subscribers offer for sale 200 bags, about 220 lbs each, of this valuable and economical manure recently imported from Peru. For particulars as to its quality, uses, &c. beg reference to the Cultivator of May and June, and the June number of the Boston Magazine of Horticulture. WIRGMAN & NEWMA'
July 1—2t. 44 Front-street, New-York.

WARREN'S IMPROVED PORTABLE HORSE POWER AND THRESHING MACHINE.

The prices for these machines are very low, viz:—two horse power alone, only $50—two horse power and thresher, $75—one horse power and thresher, $60—four horse power machine, $80—four horse power and threshing machine together, $110. Cash payable in this city on delivery. Liberal deductions made on all machines and implements to dealers. (*See L. Bostwick's & Co.'s Advertisement.*) L. BOSTWICK & CO., 146 Front-st. New-York.

KENTUCKY BLUE GRASS AND HEMP SEED.

GEORGE, LAPPIG & CO.

Seed and Agricultural Merchants, Louisville, Kentucky,

KEEP constantly on hand a good supply of Kentucky Blue Grass and Hemp seed, which they are willing to sell to eastern dealers on favorable terms. They are also dealers in Millet, Clover, Timothy, Orchard Grass, &c. july—2t.